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PROVINCIAL GRANTS TO ALBERTA MUNICIPALITIES: REVIEW, ASSESSMENT AND ALTERNATIVE UNCONDITIONAL GRANT FORMULAE

by

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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled PROVINCIAL GRANTS TO ALBERTA MUNICIPALITIES: REVIEW, ASSESSMENT AND ALTERNATIVE UNCONDITIONAL GRANT FORMULAE submitted by Deryk G. Norton in partial fulfillment of the requirements for the degree of Master of Arts.

ABSTRACT

In recent years, municipalities in Alberta have come to rely upon a substantial level of grants from the provincial government. As the number of grant types increases and the level of grant support increases, the equity of the grant distribution and the rationale for grant conditions are being increasingly challenged.

This thesis reviews the economic theory underlying grants and the structure of Alberta municipal grants in 1977. The structure of Alberta municipal grants is examined in terms of its adherence to the economic purposes of equalization and Pigouvian subsidization. It is found that unconditional grants have not been distributed on the basis claimed by policy makers and that not all municipalities are being treated equally in either the purported or actual distribution of unconditional grants. It is also found that a large proportion of conditional grants do not appear to be justified as Pigouvian subsidies. Equity factor measures are developed based on the theoretical criteria of equalization grants being intended to recognize relative volume of service, relative fiscal capacity and relative unit cost. The existing distribution of unconditional and total grants and six alternative distributions are examined in relation to these equity factor measures through simple correlation and multiple correlation analysis. The theoretical and empirical results are then used to develop a framework for the reform of the municipal grants structure in Alberta.

ACKNOWLEDGEMENT

I would like to thank Professor M. McMillan who contributed to this thesis through his many helpful comments and suggestions. I would also like to thank the numerous Alberta Government employees who assisted me in interpreting the grant program descriptions and data contained in government reports. The valuable contributions of Miss Cathy Stuart (who prepared the text of this thesis) and Mrs. Norma Smith (who prepared the tables) are gratefully acknowledged. Last, but definitely not least, I would like to thank my "thesis widow" who is about to witness the "resurrection" of her husband.

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Chapter I

INTRODUCTION

Provincial grants in Alberta represent a significant portion of revenues to municipalities. In 1977, Alberta municipalities received operating grants from the province equivalent to 18.7% of current general operating revenues and capital grants equivalent to 14.3% of new capital finances acquired.[1]

Although the generally understood purpose of existing Alberta grants is to reduce local costs in the provision of *desirable* municipal services criticism exists of the specific purpose and rationale for each type as well as of the extent to which conditional grants are used. The level and distribution of the grants are also controversial issues. Municipal governments in Alberta have expressed the concern of local governments generally in Canada and the United States that the demand for and costs of local services are growing faster than required revenues. In response to this concern, the United States and Saskatchewan (to name only two) governments have implemented substantial changes in both the level and method of distribution of funds for local governments.

This thesis examines Alberta's municipal grants in light of economic rationale for payment of grants with particular attention to the distribution rather than the level of unconditional grants.

1.1 Format of Thesis

The theory of grants is reviewed in Chapter II. The justification of grants as a tool in reducing fiscal inequities and in correcting for economic inefficiencies due to spillovers is examined. The purposes, properties and effects of grants are discussed as well as their relationships. Alberta grants, as they existed in 1977, are surveyed in Chapter III with the significance of each type being discussed. A critique of the Alberta grants structure is provided in Chapter IV. Alberta's grants as equalizing grants are analyzed in Chapter V along with several alternative formulae. The thesis concludes in Chapter VI with the presentation of an approach to be taken in effecting reform of the existing grants structure.

Footnotes

[1]Government of Alberta, Department of Municipal Affairs, *Municipal Statistics Including Improved Districts and Special Areas For the Year Ended December 31, 1977*, pp. 44, 96, 121, 269, 351.

Chapter II

THE THEORY OF GRANTS

2.1 Reasons for Grants

The public finance literature makes reference to numerous problems in the fiscal relationships between and among different levels of government. At the local level fiscal problems are found to belong to one or more of the following categories:

(a) responsibility imbalance,

(b) benefit-cost imbalance,

(c) fiscal inefficiency,

(d) horizontal inequality.[1]

Responsibility imbalance exists when the level of government spending the money is not responsible for raising the revenue. Where this imbalance exists *at the margin*, misallocation of resources may result.[2,3] Benefit-cost imbalances exist where a local government may generate costs or benefits (i.e., *spillovers*) in neighbouring jurisdictions as the result of a particular program it undertakes.[4] These spillovers result in non-optimal provision of public goods. Fiscal inefficiency is found in poorly planned and administered revenue structures as well as in poor tax co-ordination among levels of government.[5] Where tax rates remain constant and revenue needs of one level of government expand at a greater rate than receipts (with the reverse being true of another level of government) this type of inefficiency is present. Persistent recurrence of this *revenue gap* and of political

obstacles to increasing tax rates results in *a systematic underprovision of public services*.[6] Horizontal inequality refers to differences in revenue raising capacity among local governments arising from disparities in tax bases.[7] The effect of this tax base disparity is disparity in rates of taxation or level of service or both.[8]

Several structural and allocational changes have been suggested as solutions to these fiscal problems.[9] Co-ordinated taxation between levels of government and improved revenue structure (including reallocation of tax bases) are seen as solutions to responsibility imbalance and fiscal inefficiency. The removal of grants is proposed as a further solution to responsibility imbalance. Benefit-cost imbalances may be corrected by a reallocation of governmental responsibilities. Horizontal inequality may be lessened through regional expenditure programs by higher levels of government.

However, grants are an alternate solution to fiscal problems. Governments are averse to reallocating government responsibilities for fear that reallocation of a power to a higher level may result in the charge of lessening or removing local autonomy. Furthermore, centralization of power with a higher level of government can result in welfare losses through its failure to recognize choice variations among component communities.[10, 11] Different boundaries may be appropriate for different public goods. Taken to the extreme, the use of responsibility reallocation would result in an unmanageable number of service jurisdictions with overlapping boundaries, each jurisdiction with boundaries coincident with its particular benefit area. Furthermore, problems may remain in terms of costs of voting and decision making,

high overhead costs for many jurisdictions and spillover effects among public goods. Benefit-cost imbalances can be corrected through offsetting grants (and taxes) where these grants are designed to maintain local fiscal responsibility *at the margin*.[12]

Improved revenue structures for local governments can mean reduced *tax room* for provincial or federal governments. Many senior governments fear that improved revenue structures through, for example, local sales tax or income tax, would mean greater competition for the limited tax dollars voters are willing to support. Also, there are limits on the types of tax which are capable of providing improved local revenue structures. The main object of adding new revenue sources, such as income tax, is to improve the relationship between the tax and the ability to pay as well as between the tax and the benefits of expenditure. Economic interdependence and its complexity makes this goal unattainable in the case of major taxes such as corporate income tax. Grants in the form of revenue sharing by the higher level of government, can place the more elastic revenue systems at the disposal of local government.[13]

The need for tax co-ordination involving local governments is greater where local government revenue sources are numerous as would be the case with an expanded revenue structure. Therefore, where revenue sources are few due to obstacles to expanded revenue structure and the selection of the grant alternative, tax co-ordination is less of a problem.

Regional provincial and federal expenditure programs directed toward alleviating horizontal inequality have been beset by problems of:

(i) jurisdictional disputes, and

(ii) inefficiencies due to centralized, remote administration and its lack of response to local preferences.

Where these problems are likely to occur, the federal of provincial government may prefer to provide the funds and rely upon the local government to administer the service. In other words, conditional grants may be found to be politically the least hazardous means of providing minumum service levels.

More generally, in consideration of the obstacles to structural solutions to local government fiscal problems, the more senior government (federal or provincial) may choose grants as a solution. Given that grants are chosen as the instrument of public policy, what are the purposes, properties and effects of grants and how may grants be used to most efficiently deal with local fiscal problems?

2.2 Purposes of Grants

Two economic purposes of grants are evident: compensation for benefit spillovers and re-distribution of income.[14] Where an individual decision-maker influences the welfare of other persons outside the market system, it is presumed that the individual will ignore the spillover benefits or costs he generates and engage in the activity at an inefficient level. In the case of external benefits, the Pigouvian prescription is for the economic unit generating the spillover to receive a unit subsidy equal to the marginal value of the spillover benefits it creates.[15] The desired effect of the subsidy is to provide

an incentive for the decision-maker to account for external effects when deciding on the level of the activity. On the other hand, Coase argues that maximizing behavior of the party generating the spillover and the parties receiving the external effect will lead to joint action to establish an efficient allocation of resources.[16] The implication of this argument is that grants should not be made where joint action is feasible in preventing inefficiencies resulting from spillovers usually where the number of decision makers is small. Another difficulty with the Pigouvian theory exists when there are *reciprocal externalities*. When this is the case, the determination of an efficient set of subsidies is complicated and requires the solution of a set of simultaneous equations which may not be practical.[17] However, spillover situations do exist which are either not characterized by *reciprocal externalities* or are characterized by a solvable problem of *reciprocal externalities*.

The Pigouvian theory of subsidies may be extended to intergovernmental grants when it is assumed that:

(i) local governments know the preference of their constituents, and

(ii) governments act to maximize the economic welfare of constituents.

These assumptions preclude imperfections in the voting system (e.g. strategic behavior) and government goals other than the maximization of constituents' welfare such as maximization of number of votes which can typically result in some misallocation of resources.[18]

As in the discussion of benefit-cost imbalances, the jurisdiction providing a public good often does not coincide with the service area.

Generally, a public good will be provided where the marginal local benefit (MLB) equals the marginal cost to the local treasury. A Pigouvian subsidy or grant reduces the marginal cost to the local treasury with the effect of increasing output of the public good. As illustrated in Figure 1, the local government determines output of the public good to be at level OA, the point at which marginal local benefit (MLB) equals the marginal cost (price, P_1) to the local treasury.[19] However, the efficient level of consumption for the total service area is level OB, the point at which marginal total benefit (MTB) equals the marginal cost (price, P_1). A Pigouvian grant reduces the marginal cost to the local treasury from P_1 to P_2 in order to induce the local government to increase output to level OB.

As with the case of the individual in the market these subsidies remain inappropriate where joint planning and decision making can resolve inefficiencies. However, the case for Pigouvian subsidies as intergovernmental grants still remains where such co-operation does not exist or negotiation is costly.

A "welfare optimum requires both allocative efficiency and an equitable distribution of income."[20] Up to this point, the assumption has been implied that an equitable or just distribution of income exists. Government intervention to provide a more equitable income distribution may include:

(a) transfer to individuals, or

(b) interjurisdictional differences in the net effect of taxes and government expenditure

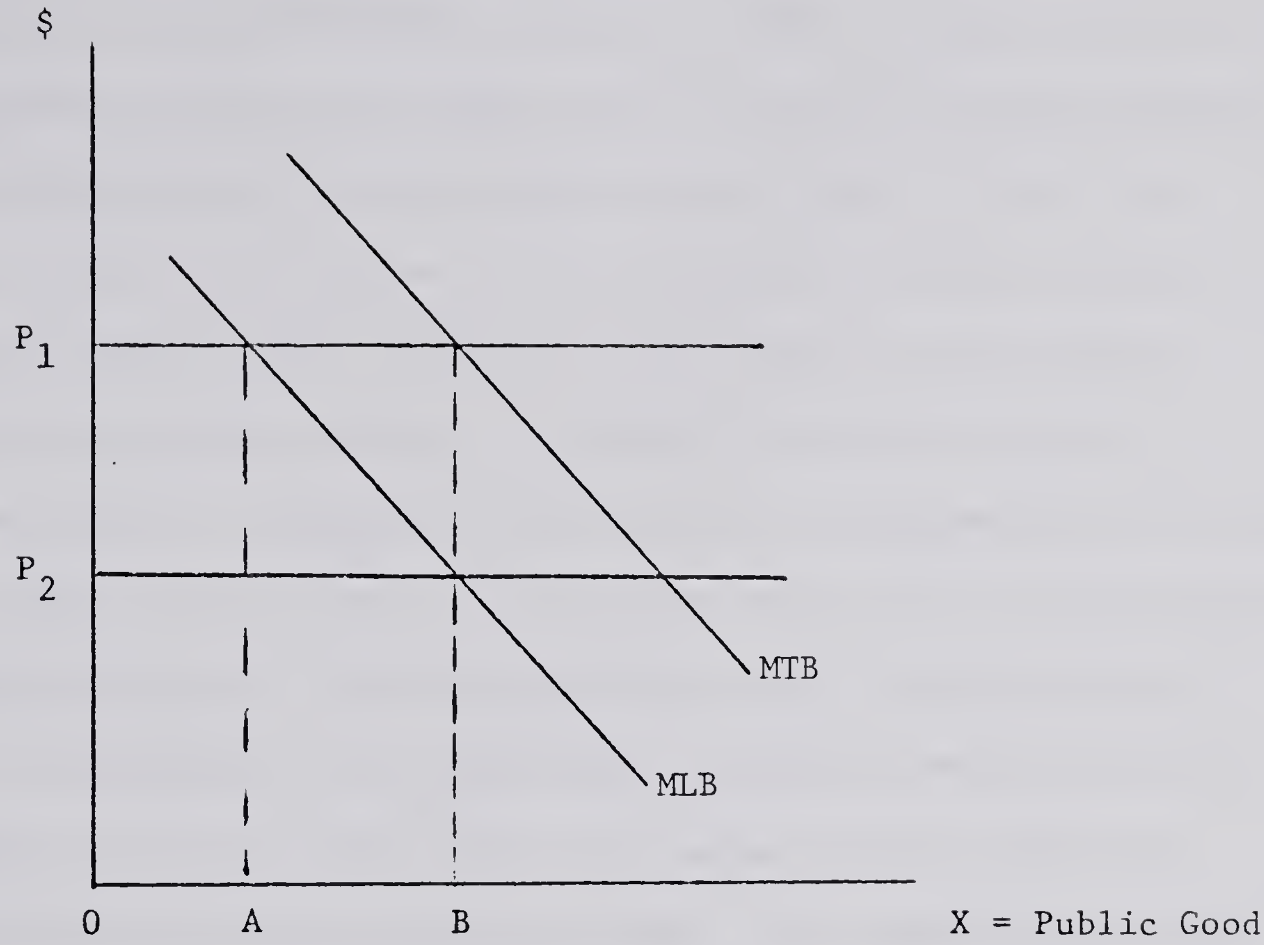


FIGURE 1

on public goods, and

(c) intergovernmental grants.

Transfers to individuals in a manner to achieve complete equalization would require a "properly designed negative income-tax program."[21] Interjurisdictional differences in the net effect of taxes and government expenditures for public goods and services would require geographical discrimination in either expenditures or taxes. However, both of these alternatives for income re-distribution may be seen as being politically prohibitive. Transfers to individuals is both administratively costly and subject to the added criticism of being an unearned *handout*. Geographical discrimination in expenditures or taxes is not likely to be accepted under a system where all local governments are considered equal. The remaining alternative, intergovernmental grants, is, therefore, considered under a system of uniform tax rates.

With uniform tax rates some of the redistributive effects of intergovernmental grants will be distorted. For example, such grants may re-distribute more income to a high income person in a poor community than to a low income person in a rich community. Nonetheless, on political grounds, intergovernmental grants may be justified for income redistribution.

Grants made to poorer jurisdictions on political grounds have been justified on the principle of horizontal equity or the *equal treatment of equals* and on the principle of vertical equity (assuming homogeneous income levels within a community). Such grants are seen as a means of maintaining "an equivalence between the distribution of nominal income and its purchasing power in terms of goods and services both

private and public."[22] Without this equivalence, a person in a wealthy community would receive a lower tax bill than would a person in a poor community (for the same level of services). The lack of equivalence or the inequality results in distortion (or inefficiency) in the form of overmigration to the relatively wealthy community. However, the effective use of grants to reduce inequities giving rise to these distortions relies upon the assumptions of:

(i) horizontal equity as a goal of governments,

(ii) similar cost functions for services provided by local governments, and

(iii) negligible interjurisdictional shifting of tax burdens.

Where complete horizontal equity is not a goal *equal treatment of equals* by the three levels of government may be sufficient and equalizing grants would be inappropriate. Taxing of firms rather than individuals renders grants inappropriate to the extent that tax burdens are shifted between jurisdictions as business extends beyond local boundaries. Equalizing grants which do not recognize differing cost functions for local services cause some distortions while reducing others. If *equal treatment of equals* means equal services and equal cost of services then equalization grants must recognize these cost variations.

Equalization of service cost differentials will, however, lead to some inefficiencies in the provision of public services as it will induce more people to live in high cost service areas. However, this criticism assumes that the market under consideration is free or per-

fectly competitive. In reality, a certain standard of public services in a location is a prerequisite for labour and capital mobility. "To the extent that equalization grants permit local governments to improve their public services, factor mobility may be improved and inefficiencies reduced."[23]

2.3 Properties of Grants

A grant may be defined as "a transfer of money, services, or material from a donor...to a receiver."[24] The properties of a grant identify the purpose of the grant as well as identify it from other grants. Seven basic properties of grants have been identified.[25] They are:

(i) conditionality,
(ii) generality,
(iii) variability,
(iv) equity,
(v) method of payment,
(vi) size, and
(vii) demand.

Conditionality is used to refer to the conditions of use to be met by a recipient in order to qualify for a grant. Where there are no conditions to be met, a grant is said to be unconditional. Generality is used to refer to the <u>scope</u> a recipient has in the use of the grant. For example, a grant may be paid as a percentage of certain costs. The conditional aspect is that the recipient pay the remaining percentage. Generality refers to the costs to be covered under the grant plan. The third property, variability, means the extent to which the amount of the

grant varies with the activity for which the grant is made. A grant may be variable, invariable (fixed or lump-sum) and may be open-ended or closed-ended. Equity refers to that characteristic of a grant relating to the *ability to pay* or the *need* of the recipient. The equity property is present in a grant which pays larger sums to those in greater *need* or those with a lesser *ability to pay*. Method of payment refers to whether the grant is paid in cash or in kind. Experience tells us that grants of greatest value are paid in cash. However, aid under some joint or shared programs takes the form of technical or professional assistance to a municipality. Size is a reference to the (absolute) amount of the grant or proportion of the costs of a service provided for by the grant. Demand refers to the relative position of the service to the recipient's overall services. Each of these seven properties may be found to vary in degree.

2.4 Effects of Grants

The effects of a grant can be on either the donor or the recipient. However, the effects on the donor are important here only to the extent it is necessary to know the purpose for which the donor has made the grant. It is of more general concern to know the effects of the grant upon the recipient, the municipality, since they determine how a grant should be designed to achieve donor objectives. These effects have been categorized as pertaining to:

(i) income,

(ii) substitution,

(iii) expenditure,

(iv) service quality,

(v) equalization, and

(vi) autonomy.[26]

The first three effects may be demonstrated with the aid of Figure 2. In the diagram X is the public good for which output is to be encouraged through payment of a grant. Curved lines I and II are community indifference curves for the recipient municipality. Line MN indicates the budget constraint for the muncipality in the absence of the grant. Therefore OA, denotes the initial output of the public good X. Line MT indicates the budget line for the municipality when the grant (matching conditional) is to be paid. Output of X is OB when the grant is paid. Line RV is a budget line representing the same relative prices as under the grant but sufficient only to maintain the welfare level prior to the grant. Output according to this contraint would be OC.[27]

The substitution effect is represented by AC. This is the increased output of public good X which would result from the reduced price of X relative to all other goods. The income effect is presented by CB and results from the shift in real income level from RV to MT (or the shift from the welfare level indicated by curve I to the welfare level indicated by curve II). The expenditure effect refers to the total amount of money spent by the municipality on the public good X. Where Px is the price of X, the expenditure effect is Px•AB.

An increase in expenditure on a public good does not necessarily mean an increase in service quality of the public good. Procedures and accounting practices may change with the result that increased expen-

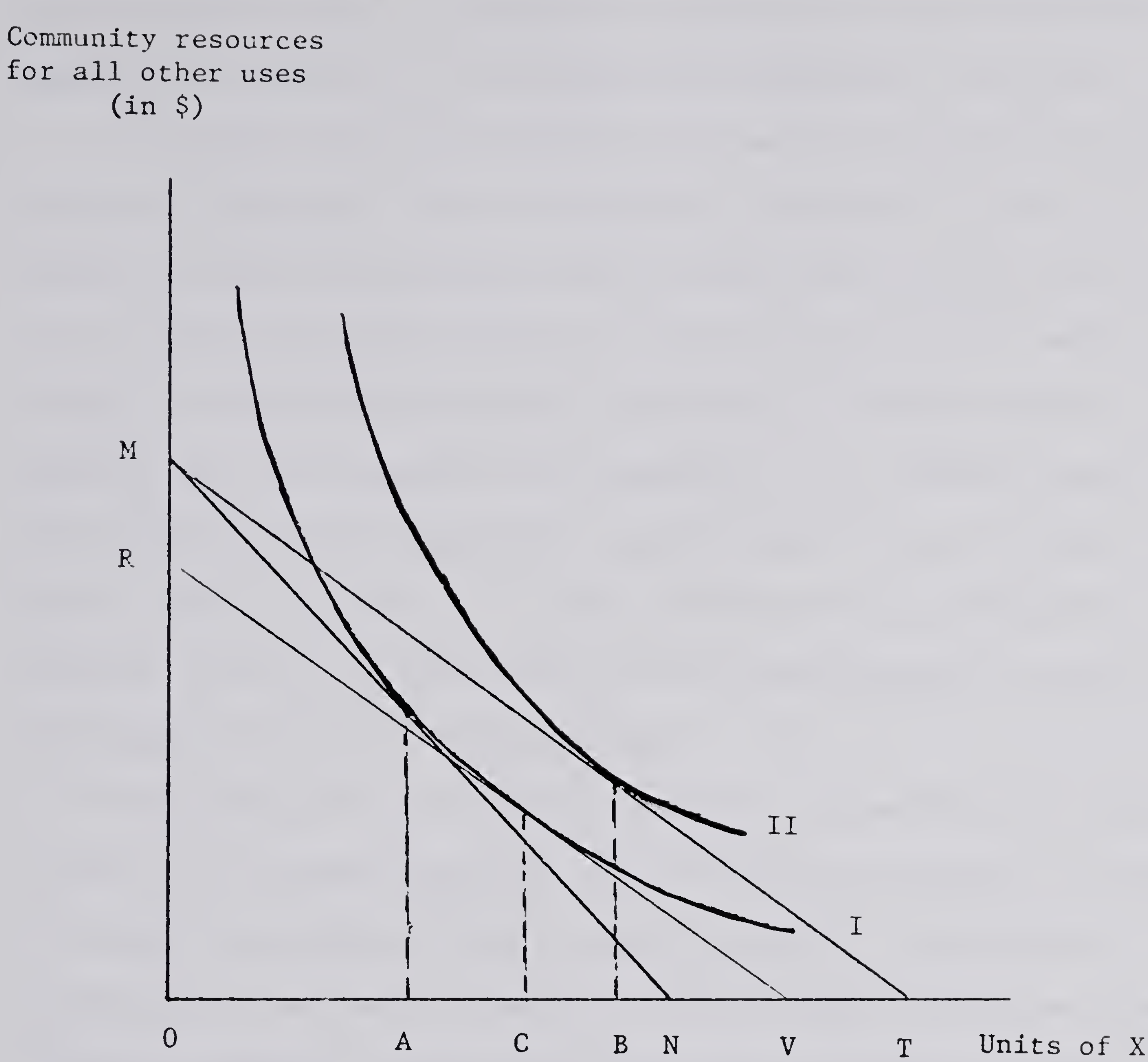

Community resources
for all other uses
(in $)
M
R
II
I
0
A
C
B
N
V
T
Units of X

FIGURE 2

diture on input for a public service does not mean increased output. The service quality effect is evidenced in qualitative changes (positive or negative) in delivery of the program to be encouraged by the grant.

The equalization effect refers to the degree of equity realized in payment of the grant. Equity involves *equal treatment of equal municipalities* and is a function of both the need for the public good and the resources of the municipality providing the public good. Need relates to the volume of services or the types of services which must be provided due to the nature of the municipality. For example, larger municipalities generally provide a greater number of service types to a greater number of people or buildings. Resources of a municipality generally refer to the fiscal capacity of the municipality as measured by property assessment or income level.

The autonomy effect is closely related to the substitution effect in that it is concerned with the extent to which the recipient is obliged to accept the conditions which accompany the grant. The recipient municipality's autonomy is reduced if resources must be diverted between or within programs to finance the shared part of a grant or if new administrative procedures must be adopted. In general there are four crucial issues faced by a government in making expenditure decisions:

(i) when to spend,

(ii) what to purchase,

(iii) how much and for whom to purchase,

(iv) which expenditure effects to attempt.

A grant recipient gives up a great deal of its power over these four issues in order to obtain resources which appear to be *free*.[28]

2.5 Relationship Between Purposes and Properties

The basic purposes of grants and the seven basic properties can be synthesized to show the types of properties characterizing each basic purpose. A grant made as a Pigouvian subsidy is made to encourage the recipient to consider the external benefits of a particular municipal service. The donor is best assured this consideration is given if the grant is made conditional upon the performance level of the municipal service. Therefore a grant made in recognition of external effects should be a conditional grant. The generality of such a grant will depend upon the generality of the service or services to be subsidized by the grant (e.g., roads vs. a specific kind of road). The variability of the grant should provide for grant funds to vary in proportion to the variation in external benefits. The grant should not be closed-ended at a point past which it can be shown that spillover effects are significantly greater than zero. The equity property requires the grant to vary in size according to the magnitude of external benefits generated by the grant recipient within the service area under the jurisdiction of the donor (or province in this instance). The local demand for the municipal service influences the proportion of service expenditures required as a subsidy to encourage efficient levels of output. The method of payment of the grant should be in cash except where payment in kind can be used to assure adherence to conditions or to improve administrative efficiency.

A grant made for the purpose of income distribution is made in consideration of three factors:

(i) relative volume of service units,

(ii) fiscal capacity, and

(iii) relative cost per unit of service.[29]

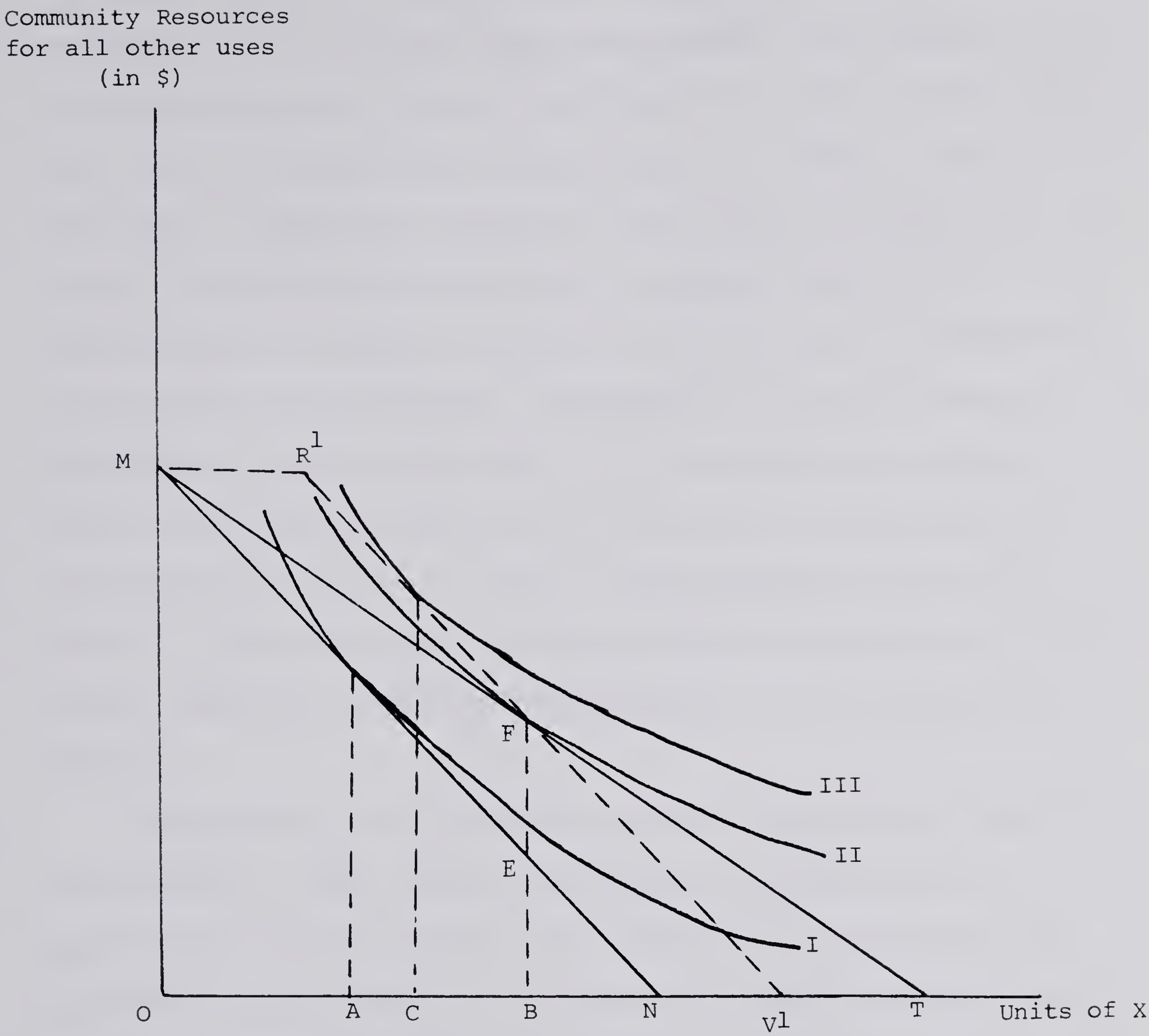
A municipality with a larger population must provide a larger volume of service units. Consequently, equity requires that a grant be variable according to volume of service required. Equity also involves recognition of relative costs in provision of services. A grant which does recognize cost differences should vary in size according to relative costs between municipalities. If the grant is made to equalize relative cost of a specific service then a conditional grant would be most effective. However, if the grant is made to equalize relative cost of a set of services, an unconditional grant would be most effective since it would permit the recipient to distribute expenditures from the more expensive to the less expensive services if desired. The appropriate grant to equalize fiscal capacities would be an unconditional grant since, as will be shown later, it would have only an income effect. An unconditional grant made for income distribution purposes would be completely general whereas a conditional grant would vary in generality according to the types of services for which differing unit costs are recognized.

To the extent that the three factors are recognized the grant will have the property of equity. As in the case of a Pigouvian grant the method of payment should be in cash unless payment in kind can improve efficiency by assuring closer adherence to the conditions of the grant. An unconditional grant made for equity purposes will be demand-neutral. It does not recognize any particular service and is therefore indif-

ferent as to the demand for any particular service. However, a conditional grant made for equity purposes will exhibit the demand property since it may reflect the demand for services selected for equalization of relative service costs. Size of grants made for equity purposes is dependent upon the *desirable* degree of equalization subjectively determined by the public policy maker. Even complete equalization relies upon a subjectively determined *standard* as a goal of equalization grants.

2.6 Relationship Between Properties and Effects

The properties and effects discussed previously can be merged into an explanation of effects expected from grants with various properties. The conditionality of a grant largely determines the significance of the income and substitution effects. It can be demonstrated in Figure 3 that an unconditional grant can exhibit only an income effect whereas a conditional grant can exhibit both an income effect and a substitution effect.[30] In Figure 3 the effects of an unconditional grant are compared to the effects of a conditional grant of an equal amount. Line MN is the budget line of the municipality before any grant is made. Line MT is the budget line when a conditional (matching) grant is made for public good X. Line R'V' is the budget line when an unconditional grant of a cost equal to the conditional grant cost of EF is in place. As in Figure 2, the conditional grant has an income effect of CB and a substitution effect of AC. The unconditional grant has only an income effect of AB since it does not change the price of X relative to the prices of all other goods. It is apparent that the expenditure effect is directly influenced by the income and substitution effects. A



Community Resources
for all other uses
(in $)
M
R1
F
E
III
II
I
O
A
C
B
N
V1
T
Units of X

FIGURE 3

large substitution effect can be expected to produce a large increase in expenditure on good X. The service quality effect is also substantially determined by the income and substitution effects. The greater are the increased expenditures on good X resulting from a grant the more likely there will be an improvement in service quality. Moreover, where conditions are significant the grant is more likely to achieve the improved performance level necessary for improved service quality. Conditionality is related to equalization to the extent that specified service costs may be equalized. Conditionality is also an important determinant of the autonomy effect. An unconditional grant has no influence on autonomy other than the reliance the recipient places on continuance of the grant in order to maintain program or tax levels. However, a conditional grant involves relinquishing power over the four crucial expenditure issues mentioned previously in the discussion of effects.

The generality property produces effects very similar to those of conditionality. Where the donor (province) is concerned with the performance standard attached to the grant and is not concerned with expenditure items, generality is complete, provided the conditions are met. Where expenditure items are specified, substitution, autonomy and service quality are relevant. A small municipality may be less able to shift expenditure to finance the unsupported cost of the grant supported program and may have a reduced substitution effect. Also, the smaller municipality with fewer services may undergo greater loss of autonomy in that it may be required to make more changes to meet the specifications of the grant program. A larger municipality may already meet many of

the specifications if it already offers a portion of the grant supported program. The less general the grant, the more likely there will be an improvement in service quality due to the implication of more detailed checks on service.

Most grants are, to some extent, variable. Types of variability include directly variable (or open-ended), lump-sum (or block), closed-ended or service unit. The type of variability of the sum payable to a municipality determines the effect on the municipality. A directly variable (open-ended) grant is one which varies directly according to a statistic representing expenditure and on which no limit is imposed. A service unit grant is one which varies according to the amount of service provided and on which no limit is imposed. A closed-end grant is a service unit or directly variable grant on which a support limit is imposed. A lump-sum or block grant is a grant which remains fixed in amount beyond the qualifying service level.

Variability has a direct influence on income and substitution effects and, therefore, a direct influence on expenditure effects. In Figure 3 R'V' may be viewed as the budget line under a lump-sum grant and MT may again be viewed as the budget line under a variable (matching) grant. It can be seen that the lump-sum grant has no substitution effect whereas both types of grants have income effects. Whereas it may be concluded that variability influences the degree of the substitution effect, it may not be concluded that variability influences the degree of income effect. Size of the grant determines the degree of income effect. As mentioned previously, expenditure effects are a function of the income and substitution effects. Service quality is influenced by

the variability property to the extent that a variable grant influences a municipality's willingness to meet the conditions of the grant. Equalization depends upon the extent to which the variability of the grant is related to differing needs and resources of municipalities. The autonomy effects of variability are similar to those of conditionality.

The last major property is equity. Equity influences the amount of the grant paid to a municipality and therefore has income, substitution and expenditure effects in proportion to the amount of the grant paid on the basis of equity considerations. Service quality improvements are an expected effect of equity based on recognition of service costs. Equalization is, naturally, the primary effect associated with the equity property since it is the primary goal of equity. The greater the degree of equity, the greater will be the degree of equalization in terms of grant compensation for differing needs and resources. The basic problem associated with equity and equalization is the selection of criteria to use in recognizing different needs and resources. This problem will be discussed further in later chapters.

Footnotes

[1] Vladimir Salazyn, "Local Intergovernmental Fiscal Problems: Some Suggested Approaches, *Governmental Finance,* (May, 1975), p. 5.

[2] *Ibid.*, p.5.

[3] Wallace E. Oates, "An Economists Perspective on Fiscal Federalism", *The Political Economy of Fiscal Federalism,* (Lexington: Lexington Books, 1977), p.16.

[4] Salazyn, "Local Intergovernmental Fiscal Problems: Some Suggested Approaches", p.5.

[5] *Ibid.,* p.5.

[6] Oates, "An Economists Perspective on Fiscal Federalism", p.16.

[7] Salazyn, "Local Intergovernmental Fiscal Problems: Some Suggested Approaches", p.5.

[8] Oates, "An Economists Perspective on Fiscal Federalism", p.13.

[9] Salazyn, "Local Intergovernmental Fiscal Problems: Some Suggested Approaches", p.6.

[10] Charles L. Schultze, "Sorting Out the Social Grant Programmes: An Economists Criteria", *American Economic Review: Papers and Proceedings,* 64 (May, 1974) p. 182.

[11] Oates, "An Economists Perspective on Fiscal Federalism, pp. 10-11.

[12] *Ibid.,* p.16.

[13] *Ibid,* p.16.

[14] Edward M. Gramlich, "Intergovernmental Grants: A Review of the Empirical Literature", *The Political Economy of Fiscal Federalism,* pp. 220-21.

[15] Wallace E. Oates, *Fiscal Federalsim* (New York: Harcourt Brace Javonavich, Inc., 1972), p.72.

[16] *Ibid.,* p.68.

[17] *Ibid.,* p.70.

[18] *Ibid.,* p.73.

[19] Figure 1, as depicted by Oates (*Fiscal Federalsim*, p.76) implicitly assumes constant marginal costs and decreasing marginal public benefits.

[20] Oates, *Fiscal Federalism,* p.78.

[21] *Ibid.,* p.79

[22] *Ibid.,* p.82.

[23] George E. Carter, *Canadian Conditional Grants Since World War II,* (Toronto: Canadian Tax Foundation, 1971) p.18.

[24] Malcolm Martini, "Towards a Theory of Provincial Municipal Grants", *Ontario Economic Review* (September/October, 1967), p.5.

[25] *Ibid.,* p.5.

[26] *Ibid.,* p.7.

[27] The effects of taxes are not specifically dealt with in the diagram. However, it is assumed that community indifference curves represent not only utility of different goods but also the disutility of levying taxes necessary to provide the goods. Furthermore, taxes levied by the donor in order to finance the grant may be viewed as a negative grant involving a downward shift in the budget line appropriate to the grant.

[28]Werner Z. Hirsch, *The Economics of State and Local Government* (New York: McGraw Hill Book Company, 1970), p.142.

[29]Russell Mathews, "Fiscal Equalization for Local Government", *Economic Record* (September, 1974), p.331.

[30]Oates, *Fiscal Federalism,* p.76.

Chapter III

PROVINCIAL GRANTS TO MUNICIPALITIES IN ALBERTA

Provincial grants as a source of revenue for Alberta municipalities, in 1977, were at a level of 18.7% of operating revenue and 14.3% of capital financing. Although the rationale for these provincial grants is not always clearly stated by public policy makers, the variety in types of grants suggests there may also be a variety of rationale.

Alberta's municipal grants have been of the unconditional type (31.9% distributed through the Department of Municipal Affairs) and the conditional type (68.1% distributed by the Department with related program responsibility). Conditional grants are paid for both capital and operating purposes. For purposes of the following descriptions, those grants affecting the relative prices of services or programs have been classified as conditional grants. Therefore, grants payable for a specific service or facility are considered as conditional grants.

3.1 Unconditional Grants

The following discussion of unconditional grants is restricted to direct grants from provincial general revenues. These grants were $51.8 million in 1976-77 (as shown in Table 1) and exclude provincially collected fees and fines distributed to the municipal government affected by the activity generating the fee or fine.

Table 1

Provincial Grants to Municipalities
During 1976-77 Provincial Fiscal Year

Total Unconditional*	$ 51,833,999
Conditional:	
Transportation	$ 55,991,233
Health & Welfare	14,399,079
Recreation and Culture	12,079,261
Environmental Development	1,948,846
Protective Services	16,577,449
Environmental Health	4,036,060
Fiscal Services	5,504,142
Other	251,924
Total Conditional	$110,787,994

Source: Provincial Auditor, Public Accounts 1976-77 Vol. I

* Excludes law enforcement grants of $13,713,775 which is often referred to as unconditional. Due to the condition that law enforcement services be provided by the recipient municipality these grants have been shown as conditional grants under "protective services".

The present method of paying direct unconditional grants originated in 1973. In that year, $34 million was appropriated for grants relating to:

(i) *relative economic need,*

(ii) *assistance for municipal services,*[1] and

(iii) an incentive for reducing municipal expenditure.

Approximately $10 million (30%) was intended for grants based on relative economic need, $4.5 million (13%) as assistance for municipal services, and $19.5 million (57%) for expenditure minimization incentives. Relative economic need and assistance for municipal services were embodied in grants referred to as Municipal Assistance Grants and the grants intended for incentive were referred to as Municipal Incentive Grants.

3.1.1 Relative Economic Need

The method for distributing grants based on relative economic need varies betwen urban and rural municipalities. Under the urban formula it was assumed that population size of the municipality was somewhat reflective of relative level of need. Based on this assumption, four municipal size categories were established and average per capita (equalized) assessments were computed for each category as shown in Table 2. The computed average per capita assessment of category 1 was adjusted to a level slightly below the per capita assessment of both cities (Edmonton and Calgary) in this category. Computation of the average per capita assessment of category 3 included municipalities in category 2 and computation of the average per capita assessment for category 4 included municipalities in category 3. The purpose of these

Table 2

Size Categories for Urban Municipalities Under 1973
Municipal Assistance Grant Formula

Class	Size	Average Per Capita Equalized Assessment
1	Population over 400,000	$2,100
2	Population under 400,000 and over 25,000	$2,000
3	Population under 25,000 and over 3,000	$1,850
4	Population under 3,000	$1,700

Source: Government of Alberta, Attachment to letter from Minister of Municipal Affairs to all Municipal Secretaries on the subject of Municipal Assistance Grants, Dated 4th July, 1973.

inclusions was to raise the level of equalized assessment for category 3 and 4 municipalities close to that for category 2 municipalities. The grant payable to urban municipality i was to be determined from a formula of the following form:

$$(AA_c - AM_{ci}) \times \frac{EMR_i}{1000} \times POP_i \times f$$

where AA_c = average per capita equalized assessment (1972) for the category c

AM_{ci} = actual per capita equalized assessment (1972) for the municipality i

EMR_i = equalized mill rate for municipality i (to a maximum of 35 mills for towns, 40 mills for villages, 10 mills for towns in receipt of industrial tax transfer and a maximum of 5 mills for villages.)

POP_i = population (1972) of municipality i

f = factor based on available dollars (.50963).

(Note: Where $(AA_c - AM_{ci})$ is negative, no grant was payable.)

Relative economic need for counties and municipal districts was determined on the basis of equalized assessment per weighted township where townships of the following types, together with their assessments, were excluded:

(i) townships with assessment greater than $800,000

(ii) townships with assessment less than $200,000

(iii) townships contained within large areas that are wooded land or mostly ranching lands

Presumably, townships with over $800,000 of assessment were considered

to have assessments sufficiently large that a municipality could service the area adequately without excessive taxation. Other townships were excluded on the basis of services not being directly related to the size of the area. The number of weighted townships for each municipality was equal to the number of actual townships (after exclusions) where there were 37 or fewer townships in the municipality or where there were greater than 37 townships the number was determined according to the following formula subject to a maximum value of 48.1:

$$\left\{\left[(N-37) \times .01\right] + 1\right\} \times 37$$ where N is the actual number of townships after exclusions.

The grant payable to a county or municipal district was to be calculated according to the following formula:

$$(ATA - MTA_i) \times \frac{EMR_i}{1000} \times WN_i$$

where ATA = average equalized assessment per weighted township for weighted townships of all counties and municipal districts (to a maximum of 48.1 weighted townships)

MTA_i = average equalized assessment per weighted township in municipality i (excluding townships and assessments described above)

EMR_i = equalized mill rate in municipality i (to a maximum of 50 mills)

WN_i = number of weighted townships in municipality i

(Note: Where $(ATA - MTA_i)$ is negative no grant was payable.)

Grants based on relative economic need for improvement districts were paid according to the same formula as for counties and municipal districts with a few adjustments. Average equalized assessment per

weighted township was limited to 55.5 weighted townships rather than 48.1 townships. The above formula was multiplied by a factor of .184 to establish the grant where the factor of .184 was based on available dollars for grants to improvement districts. Grants for Improvement Districts 5 and 7 were established on a basis recognizing their current financial positions and population composition. However, this basis has not been made public. The determination of the grant based on relative economic need for Special Areas was similar to that for Improvement Districts.

3.1.2 Municipal Services Assistance

The method for distributing grants based on assistance for municipal services also varied between urban and rural municipalities. Each urban municipality was given a grant of $2 per capita in 1973. This grant was given "to assist in the cost of municipal services that are generally related to population, e.g., police, fire, etc."[2] Each county and municipal district was given a grant of $20 per mile of district road in 1973. The intention of this grant was to assist these municipalities "in the cost of services that are generally related to the area of the municipality."[3] This grant was not provided to improvement districts or special areas.

3.1.3 Municipal Incentive Grant

A Municipal Incentive Grant was paid to a municipality which limited growth in either its 1973 expenditure or 1973 mill rate to 7.5% or which agreed to limit either of them to 22.5% combined growth in the years 1973, 1974, and 1975. A municipality which exceeded these growth

rates could still qualify if it exceeded them by reason of a general property reassessment, disaster costs or long term capital expenditure commitments. All urban municipalities, counties, municipal districts, and special areas qualified for Municipal Incentive Grants. Summer villages and national parks were excluded from this grant component, as well as from the other unconditional grant components.

The amount of a Municipal Incentive Grant was equivalent to the greater of one third of the previous year's (1972) supplementary school requisition on the municipality or a five mill levy on the municipality. Where the supplementary school requisition was less than five mills the grant was equivalent to the total supplementary school requistion.

3.1.4 Grant Amalgamation

The sum of a municipality's 1973 Municipal Assistance Grant and 1973 Municipal Incentive Grant served as the base for that municipality's unconditional grant in subsequent years which became known as the Municipal Assistance Grant. The Municipal Assistance Grant to each municipality in subsequent years was determined from the previous year's grant plus an escalation factor. These escalation factors have been as follows:

1974	15.0%
1975	15.0
1976	11.0
1977	10.0
1978	8.0

3.1.5 Growth Grant

In 1977 a new unconditional grant was implemented to supplement the Municipal Assistance Grant in recognition of uneven growth in municipalities' populations since 1973. This new *growth grant* consisted of a grant of $44 per capita in respect of population growth in excess of 2% between 1975 and 1976 in a municipality. This new grant resulted in the transfer of a further $3.2 million to the majority of municipalities in 1977 and is intended to be recomputed annually based on growth in excess of 2% between the two immediately preceding years.

3.2 Conditional Grants

In 1977, conditional grants were paid by the province to municipalities for a wide variety of purposes from several government departments. The grant programs of greatest dollar significance and the grant programs of most common interest are referred to in the following discussion. It is intended that this discussion be restricted to only those provincial assistance programs in aid of public services administered by a municipality within its boundaries. Therefore, financial assistance to municipalities which is essentially a *pass-through* of money to either individuals or autonomous authorities (e.g. boards of health) are not included.

Conditional provincial grants are paid to municipalities in respect of the following specific functional areas:

1) transportation,
2) recreation and culture,
3) protective services,
4) public health and welfare,

5) environmental development,

6) fiscal, and

7) environmental health.

Many of these functional areas have grants for both capital and operating purposes. In 1976-77 the total of these grants was $110.8 million. A breakdown of this amount by functional area is shown in Table 1. Unfortunately, exact splits between capital and operating grants for each functional area are not available. In order to indicate the relative significance of each grant estimated amounts are used based on program announcements. It is conceded that this is done at the expense of accounting precision.

3.2.1 Transportation

Transportation grants to municipalities provided by the Department of Transportation were approximately $56.0 million in 1976-77 of which 67% was intended for capital purposes. These capital purpose grants are paid specifically for major roadway construction in cities, establishment or improvement of urban public transit, airport construction, street improvements in towns and villages, culvert installation in rural municipalities and railroad crossing improvement. The remaining 33% paid for operating purposes is paid specifically for operating deficits of public transit, road maintenance and improvement in rural municipalities, highway route planning by cities, public transit system development studies, highway maintenance in small cities and feasibility studies for urban railway relocation.

From the capital portion the annual sum of $18 million is distributed among eleven Alberta cities to assist them in the development

of improved arterial roadway networks. Each grant is equivalent to 2/3 of approved capital costs for these projects with Edmonton and Calgary being limited to $6 million each. A recent addition to transportation programs is a program for planning design and construction of major roadway corridors through both Edmonton and Calgary. The sum of $80 million has been allocated for each of these cities over the 1977-83 period but no capital expenditures have yet been made under the program. The additional sum of $16.1 million is provided for improving public transit services through development of major public transit facilities and purchase of transit equipment. This grant is transferred annually from the province to a trust fund maintained under agreement with the municipality. Withdrawals from the fund are subject to provincial approval. In 1976, Edmonton and Calgary were each limited to a transfer of $7.5 million. The sum of $5.7 million is provided for constructing or upgrading airports in Alberta communities. Grants are made for approved costs of projects. The sum of $1.9 million is provided to assist towns and villages with street construction programs. Each town or village is eligible for one such grant in the 1973-78 period. Grants for towns, villages and summer villages with a population over 100 are based on a formula providing $20,000 plus $20 per capita. Grants to summer villages with a population less than 100 are based on the formula of $5,000 plus $20 per capita. Grants are the lesser of the actual expenditure on the provincially approved projects or the amount determined under the formula. Small sums are provided for promoting improved culvert installations by counties and municipal districts and for improving railroad crossings on roads under provincial jurisdiction. These grants are based on costs of individual projects.

Six cities are assisted in the amount of \$3.5 million in respect of their public transit system operating deficits. Individual grants are the lesser of \$3.33 per capita and 50% of the operating deficit shown in the previous year's financial statement. The sum of \$21.2 million is allocated to assist rural municipalities with the improvement and maintenance of roads. Approximately \$14.0 million is paid to counties, municipal districts and special areas for upgrading of roads under approved projects and specifications. A further \$107 thousand is allocated to assist cities with maintaining primary highways within their boundaries. This grant is paid on the basis of \$2,000 per mile of primary highway within the city boundaries. However, this grant is restricted to cities with populations less than 100,000. The sum of \$1.6 million is provided for research and development incentives for cities. These grants are generally paid on the basis of 2/3 of the cost of approved projects for long term highway route planning and public transit system experiments. Funds are also included for railway relocation feasibility studies for all types of urban municipalities.[4,5,6]

3.2.2 Recreation and Culture

Recreation grants to municipalities from the Department of Recreation, Parks and Wildlife were approximately \$11.7 million in 1976-77 of which 93% was intended for capital purposes. The capital purpose grants are for development of major cultural/recreational facilities by municipalities and for the co-operative development of recreation programs and facilities by a municipality and a school board, community service organization or another municipality. In the 1975-84

period each municipality is eligible for a grant of $10 per capita per year for the development of regional multi-purpose cultural/recreational facilities. During 1976-77, approximately $9.6 million was distributed for this purpose. A further $3.0 million was distributed on a per capita basis to municipalities co-operatively planning and developing a joint-use facility. Operating grants totalling $1.0 million in 1976-77 were paid to provide assistance to municipalities for the operation of recreational programs. These grants were paid on the basis of $1.00 per capita for the first 20,000 population of a municipality and 20¢ per capita thereafter.[7,8,9.]

Grants to municipalities from the Department of Culture were approximately $366 thousand in 1976-77 of which 80% was intended for operating purposes. Operating grants are paid primarily in aid of library operation but also include aid for the printing of historical publications sponsored by municipalities, operation of local museums and compilation of inventories of local historic sites. Approximately 50% of costs of these programs are paid in the form of provincial grants. In 1977 the library grant was revised to a level of $1.50 per capita for most municipalities other than Edmonton and Calgary. The latter will each receive $1.00 per capita. Municipalites with very low levels of library expenditures are to receive small lump sum grants. This revision is expected to increase these grants to approximately $2.6 million per annum.

Capital purpose grants from the Department of Culture are intended to aid in the preservation of historic sites. Although these grants have not been significant in total, the province provides 50% of costs

for approved projects.[10,11,12]

3.2.3 Protective Services

Municipal grants to Alberta municipalities from the Solicitor General's Department were approximately $16.5 million in 1976-77. Virtually the entire sum was provided to municipalities in respect of their own policing services. All urban municipalities with a population in excess of 1,500 are required to provide policing services and are paid a grant based upon one-half the cost of a R.C.M.P. constable for every 800 persons except for Edmonton and Calgary which received this amount for every 550 persons. A portion (13%) of this grant is specifically subject to the municipality maintaining these ratios of population to constable. A municipality which becomes responsible for its own policing when it attains a population of 1,500 is eligible for a five-year phase-in grant of 50% of manpower costs the first year, 40% of the manpower costs in the second year, and 25% in the third, fourth and fifth years. An amount of $200 thousand was provided for this grant in 1976-77. A further grant of $200 is paid to each summer village supplying its own policing during the summer months. Seven summer villages were paid for this purpose in 1976-77. A city, town or village is eligible for a grant of $7 per day for each person held pending charges under The Liquor Control Act. The sum of $150,000 was provided for this purpose in 1976-77. A capital grant is also available from this Department to help defray the cost of police building construction or renovation. This grant is based on 2/3 of the cost of the building project to a maximum of $60 thousand. However, no grant of this type was paid in 1976-77.[13,14,15]

3.2.4 Public Health and Welfare

Approximately $14.4 million was allocated in 1976-77 by the Department of Social Services and Community Health for support of municipal services in the area of public health and welfare. The entire sum was for operating grants. The largest portion, 67%, of this sum was for preventive social service programs. Where a municipality operates programs to prevent social and economic breakdown of individuals or families, 80% of approved costs are offset in the form of provincial grants. These programs include day care services, senior citizen services, community services, family services, home care services and youth services. During 1976-77 the transfer of social assistance to provincial jurisdiction was virtually complete. Therefore, only 7% of the above sum was paid in 1976-77 as provincial grants to municipalities based on a 90% reimbursement of assistance provided to unemployed persons residing in the municipality during the previous year.

Grants to municipalities for the care and supervision of neglected or delinquent children represent 18% of the above sum. Children removed from their parents care, pending disposition by the courts and placement in foster homes or institutions, are the subject of this program. Only the cities of Calgary and Edmonton qualify for these grants as services in other municipalities are provided directly by the province. Four major urban municipalities (Edmonton, Calgary, Lethbridge, and Medicine Hat) receive further grants in support of the costs of specialized police squads dealing with juvenile delinquency. Approximately 50% of approved costs are paid by the province under this program which represented 4% of this Department's grants to municipalities in 1976-77.

[illegible]

Edmonton and Calgary receive additional support in respect of their costs in providing probation services for juvenile offenders. Provincial support for this program is 80% of approved costs. This program represents 4% of the sum of $14.4 million.

Nine municipalities (including the cities of Calgary, Edmonton, Red Deer, and Grande Prairie) received approximately $61 thousand for providing pre-school day care programs for physically handicapped and mentally retarded children. This grant provides for 100% reimbursement of approved program costs.[16,17,18.]

3.2.5 Environmental Development

Grants for programs in the area of environmental development are provided by the Departments of Environment and Agriculture and are for both operating and capital purposes.

Department of Environment grants are primarily for capital purposes. In 1976-77, the approximate sum of $2.5 million was provided for two such programs. Water management projects (41 in number) received 68% of this sum. The remainder was intended for land reclamation projects undertaken by municipalities.[19,20.]

Department of Agriculture grants are primarily for operating purposes. In 1976-77, the approximate sum of $1.3 million was provided for these grants. Special projects that benefit crop production, land use and the rural environment such as roadside backsloping and seeding are allocated 50% of this sum. A further 25% of this sum is allocated for paying 50% of the salary cost of a full-time agricultural fieldman. Municipal projects for improving field crops receive 10% of the above

sum. The remainder is provided as support for soil conservation, horticultural crop development, rural beautification, training of agricultural advisory committee personnel and miscellaneous agricultural programs conducted by municipalities.[21]

3.2.6 Fiscal

In 1976-77, the sum of $5.5 million was paid to over one hundred and fifty municipalities as an *interest stabilization grant* by the Department of Municipal Affairs. Each grant is equal to a municipality's interest charges in excess of 8% on capital borrowing from the province since January 1, 1974 provided the capital project is not otherwise subsidized.[22]

3.2.7 Environmental Health

Grants for programs in the area of environmental health are provided by the Departments of Environment and Agriculture and are for both operating and capital purposes.

The Department of Environment allocated $980 thousand for capital project assistance in 1976-77. Projects for water collection and treatment received 60% of this sum. Each grant was determined on the basis of the per capita debenture repayment and its excess over $18.74 for existing systems or $25.76 for new systems. A similar program to assist in equalizing costs in construction of sewage treatment facilities is allocated 30% of the above sum. The remaining portion of the sum intended for capital grants is to provide assistance for municipalities to develop sanitary landfill sites or other necessary land for waste

management. Under this program the province purchases land and leases it to municipalities for purposes of a landfill site.

A significant operating grant provided by the Department of Environment is the $330 thousand program of assistance for controlling biting flies. Under this program, the province pays approximately 50% of the costs of approved mosquito abatement programs undertaken by thirty municipalities.[23,24.]

Department of Agriculture grants are primarily for operating purposes in the area of environmental health. The sum of $750 thousand was allocated in 1976-77 for assisting municipalities in the control of weeds, insects and other pests harmful to agricultural production.[25]

3.3 Overview

Approximately one-third of Alberta grants to municipalities have been paid unconditionally on the basis of factors recognizing relative economic need, municipal services, rate of expenditure growth and population growth. The remaining two-thirds has been paid conditionally based on program provided, municipality type, municipality population and matching funds from municipality. The adherence of these grants to the theory of grants is explored in the following chapter.

Footnotes

[1]Government of Alberta, Attachment to letter from Minister of Municipal Affairs to Municipal Secretary on the subject of Municipal Assistance Grants, Dated 4th July, 1973, pp. 1-3.

[2]*Ibid.*, p. 3.

[3]*Ibid.*, p. 4.

[4]Government of Alberta, Department of Municipal Affairs, *Inventory of Provincial Grants and Cost Sharing Programs for Alberta Municipalities, School Authorities and Other Local Government Entities*, Revised August, 1977, pp. 149-77.

[5]Government of Alberta, Department of Transportation, *Alberta Transportation Annual Report 1976-77*, p. 29.

[6]Government of Alberta, Provincial Auditor, *Public Accounts 1976-77, Vol. 1*, P. 278.

[7]Department of Municipal Affairs, *Inventory of Provincial Grants,* etc., pp. 111-17.

[8]Government of Alberta, Department of Recreation, Parks and Wildlife, *Alberta Recreation, Parks and Wildlife Annual Report, 1976-77*, p. 19.

[9]Provincial Auditor, *Public Accounts 1976-77, Vol. 1*, p. 236.

[10]Department of Municipal Affairs, *Inventory of Provincial Grants,* etc., pp. 43-53.

[11]Government of Alberta, Department of Culture, *Alberta Culture Annual Report 1976-77*, p. 39.

[12]Provincial Auditor, *Public Accounts 1976-77, Vol. 1*, p. 137.

[13] Department of Municipal Affairs, *Inventory of Provincial Grants*, etc., pp. 137-47.

[14] Government of Alberta, Department of the Solicitor General, *Alberta Solicitor General Annual Report 1976-77*, p. 27.

[15] Provincial Auditor, *Public Accounts 1976-77, Vol. 1*, p. 264.

[16] Department of Municipal Affairs, *Inventory of Provincial Grants*, etc., pp. 119-33.

[17] Government of Alberta, Department of Social Services and Community Health, *Alberta Social Services and Community Health Annual Report 1976-77*, pp. 35-36.

[18] Provincial Auditor, *Public Accounts 1976-77, Vol. 1*, pp. 252-54.

[19] Department of Municipal Affairs, *Inventory of Provincial Grants*, etc., pp. 61-73.

[20] Government of Alberta, Department of Environment, *Alberta Environment Annual Report 1976-77*, p. 48.

[21] Department of Municipal Affairs, *Inventory of Provincial Grants*, etc., pp. 5-39.

[22] *Ibid.*, pp. 101-02.

[23] *Ibid.*, pp. 61-73.

[24] Department of Environment, *Alberta Environment Annual Report 1976-77*, p. 26.

[25] Department of Municipal Affairs, *Inventory of Provincial Grants*, etc., pp. 5-39.

Chapter IV

CRITIQUE OF PROVINCIAL GRANTS TO MUNICIPALITIES IN ALBERTA

Alberta's municipal grants have been analyzed in view of the purposes, properties and effects embodying the theory of grants. This chapter discusses the structure of 1977 unconditional and conditional grants and identifies weaknesses in the structure in relation to grant theory. Alternatives to conditional grant structures are suggested but alternatives to the unconditional grant structure are deferred to the subsequent chapters.

4.1 An Evaluation of Unconditional Grants Structure

The previous discussion of the theory of grants indicated that unconditional grants are prescribed for the purpose of equity or equalization and that equity considerations often include the three factors of:

(i) relative volume of service units,

(ii) relative fiscal capacity, and

(iii) relative cost per unit of service.

It can be clearly shown that Alberta's unconditional grants originally contained elements recognizing these three factors but it can also be clearly shown that it would be an error to assume that equitable treatment exists for all municipalities.

4.1.1 1973 Municipal Assistance Grant

An analysis of the 1973 Municipal Assistance Grant formula (upon

which the 1977 grant distribution is highly dependent) indicates the following weaknesses underlying the formula:

(i) measures of fiscal capacity differ between rural and urban muncipalities and between individual rural municipalities,

(ii) measures of service volume differ between rural and urban municipalities,

(iii) the formula implicitly assumes that rural municipalities have higher service costs than urban municipalities,

(iv) the formula implicitly assumes that larger rural municipalities have lower unit costs than smaller rural municipalities,

(v) the formula implicitly assumes unrepresentative relationships between size of urban municipalities and cost per capita,

(vi) variables which operate interdependently in the formula represent criteria which are independent,

(vii) the mill rate in the formula duplicates the basic equity considerations recognized elsewhere in the formula, and

(viii) stated variables in the formula explain only a portion of the actual 1973 grant distribution.

4.1.1.1 Fiscal Capacity Measure

The basis for the *relative economic need* portion of the 1973 formula is not neutral with respect to fiscal capacity measurement between urban and rural municipalities. This portion of the formula uses equalized assessment as a base for both urban and rural municipalities but

equalized assessment is converted to different measures of relative fiscal capacity for each of the urban and rural categories. Urban municipalities' relative fiscal capacities are measured on the basis of equalized assessment per capita whereas rural municipalities relative fiscal capacities are measured on the basis of equalized assessment per township. Secondly, as indicated by amounts of $3.05 and $17.33 in Table 3, the sum allocated to urban municipalities for distribution on the basis of relative economic need was substantially less on a per capita base than for rural municipalities.

The use of equalized assessment as a measure of the economic base of a municipality introduces an additional effect on the neutrality of the formula between urban and rural. Equalized assessment for non-farmland is based on a percentage of market value and includes assessment of non-farm buildings. However, equalized assessment for farmland has a maximum of $40 per acre which is substantially less than the percentage (20%) of market value used for non-farmland. Furthermore, there is no assessment of farm buildings. The uneven effect on the 1976 equalized assessment of rural municipalities of the limit on farmland assessment is indicated in Table 4.

It is evident from Table 4 that the effect of the limit on farmland assessment was not neutral among rural municipalities in 1976. Estimated equalized assessment relationships based on market value ranged from 108.6% to 262.3% of the actual equalized assessment per township. It would appear reasonable to assume that this non-neutrality also existed in 1973. Given the standard of $428,450 of assessment per township from which assessment deficiency was determined in the 1973 formula it is

Table 3

Comparison of Urban and Rural
Municipal Assistance Grants, 1973
(Per Capita Basis)

	Municipal Assistance Grants	Population	Miles of District Road	Total Per Capita	Total Per Capita (Excl. Municipal Services Grant)
Urban:	$ 6,281,312	1,244,137	n/a	$ 5.05	$ 3.05
Cities	2,317,723	984,096	n/a	2.36	0.36
Towns	3,124,018	216,811	n/a	14.41	12.41
Villages	839,571	43,230	n/a	19.42	17.42
Rural:					
Counties and Municipal Districts	7,483,596	306,421	91,599	24.42	18.44
Improvement Districts and Special Areas	1,087,060	82,528	n/a	13.17	13.17
TOTAL - Rural	$ 8,570,656	388,949	91,599	$22.04	$17.33
TOTAL - Urban & Rural	$14,851,968	1,633,086	91,599	$ 9.09	$ 6.45

Table 4

Farmland Adjustment Effects on Equalized Assessment of Rural Municipalities, 1976

(Counties and Municipal Districts)

Municipality ID No. [1]	IDT	Equalized Assessment	Farmland Assessment	Farmland Ratio to Market Value [2]	Adjusted Equalized Assessment	Percentage Change Due to Adjustment
133	5	0.310404E+08	0.103851E+08	7	0.503270E+08	62.13370
334	5	0.186745E+08	0.129881E+08	6	0.489801E+08	162.28300
255	5	0.147127E+08	0.868380E+07	6	0.349749E+08	137.71900
235	5	0.248263E+08	0.627770E+07	6	0.394743E+08	59.00170
340	5	0.134926E+08	0.732450E+07	13	0.174365E+08	29.23050
299	5	0.209078E+08	0.114212E+08	11	0.302524E+08	44.69430
314	5	0.201166E+08	0.615010E+07	11	0.251485E+08	25.01350
118	5	0.162520E+08	0.127723E+08	13	0.231294E+08	42.31700
20	5	0.160102E+08	0.107469E+08	8	0.321306E+08	100.68800
348	5	0.196670E+08	0.826370E+07	7	0.350139E+08	78.03320
15	5	0.880161E+07	0.484050E+07	10	0.136421E+08	54.99550
12	5	0.866719E+07	0.488910E+07	11	0.126674E+08	46.15300
286	5	0.636904E+07	0.429190E+07	11	0.988059E+07	55.13470
195	5	0.256505E+08	0.125913E+08	7	0.490343E+08	91.16310
349	5	0.264032E+08	0.159193E+08	6	0.635482E+08	140.68400
226	5	0.412191E+08	0.138502E+08	6	0.735362E+08	78.40330
243	5	0.175666E+08	0.692590E+07	8	0.279555E+08	59.13970
294	5	0.971797E+07	0.671660E+07	13	0.133346E+08	37.21580
302	5	0.152159E+09	0.433800E+07	5	0.165173E+09	8.55284
323	5	0.112854E+08	0.705930E+07	10	0.183447E+08	62.55240
49	5	0.228276E+08	0.150810E+08	8	0.454491E+08	99.09720
263	5	0.356643E+08	0.177876E+08	6	0.771687E+08	116.37500
329	5	0.210274E+08	0.149138E+08	10	0.359412E+08	70.92540
201	5	0.426970E+08	0.981730E+07	5	0.721489E+08	68.97880
204	5	0.226421E+08	0.120963E+08	6	0.508668E+08	124.65600
222	5	0.148680E+08	0.987780E+07	9	0.269409E+08	81.20000
193	5	0.118865E+08	0.541280E+07	10	0.172992E+08	45.53750
110	5	0.211553E+08	0.129986E+08	10	0.341539E+08	61.44370
198	5	0.120659E+08	0.842360E+07	8	0.247013E+08	104.71900
245	5	0.827412E+08	0.458520E+07	5	0.964968E+08	16.62480
53	6	0.125849E+08	0.720030E+07	6	0.293856E+08	133.49800
251	6	0.174097E+08	0.549610E+07	6	0.302339E+08	73.66130
312	6	0.149310E+08	0.993300E+07	6	0.381080E+08	155.22700
353	6	0.160981E+08	0.108952E+08	6	0.415202E+08	157.92000
111	6	0.354528E+08	0.982250E+07	6	0.583720E+08	64.64680
1	6	0.262981E+07	0.138420E+07	11	0.376234E+07	43.06490
269	6	0.695578E+08	0.157693E+08	6	0.106353E+09	52.89850
296	6	0.116038E+08	0.886820E+07	11	0.188596E+08	62.52940
191	6	0.237406E+08	0.114531E+08	10	0.351937E+08	48.24250
258	6	0.166211E+08	0.658990E+07	11	0.220128E+08	32.43900
336	6	0.129924E+08	0.602820E+07	11	0.179245E+08	37.96170
36	6	0.133929E+08	0.330910E+07	13	0.151748E+08	13.30410
305	6	0.302172E+08	0.811450E+07	5	0.545607E+08	80.56150
346	6	0.135879E+08	0.101847E+08	10	0.237726E+08	74.95590
287	6	0.599205E+07	0.498660E+07	8	0.134720E+08	124.83000
290	6	0.224335E+07	0.191410E+07	9	0.458280E+07	104.28400
246	6	0.575710E+07	0.217370E+07	8	0.901765E+07	56.63530
107	6	0.569139E+07	0.298010E+07	9	0.933373E+07	63.99740
			0.41453210E+09		0.56067566E+10	

1. See Appendix H for conversion from municipality name to ID No.
2. Estimated ratios of farm land assessment to market values for each rural municipality as provided by Alberta Municipal Affairs.

then reasonable to conclude that the limit on farmland assessment created a bias in the distribution of grants to those rural municipalities with a high value of farmland.

The basic formula for recognizing *relative economic need* of rural municipalities provided for the following data adjustments prior to grant calcuations:

(a) exclusion of townships with assessments greater than $800,000 or less than $200,000 as well as large areas of wooded or ranching lands from counties and municipal districts, and

(b) municipalities of greater than 37 townships has their number of townships weighted downward and limited to a maximum number.

Both adjustments result in inequities in the measurement of fiscal capacity among rural municipalities. The exclusion of townships with assessments greater than $800,000 will result in the understatement of the fiscal capacity of a municipality affected. Similarly, the exclusion of townships with assessments less than $200,000 will result in the overstatement of the fiscal capacity of a municipality.

The non-neutrality between urban and rural municipalities is also the case in the recognition of relative volume of service under the Municipal Assistance Grant. The population variable for urban municipalities and the variables of township area and road mileage for rural municipalities recognize relative volume of service as a principle of equity. The use of these variables may be equitable for municipalities within a category (urban or rural) but can result in inequity between categories. Population is recognized as a service volume variable for only urban municipalities and yet it is evident that

population is a service volume variable applicable to rural municipalities which contain relatively large populations within a relatively small number of townships. Also, area and road mileage are recognized as service volume variables for only rural municipalities and yet it is evident that these variables are applicable to urban municipalities (e.g., City of Calgary) which contain relatively large areas and relatively large road mileage.

4.1.1.2 Service Volume Measure

In the formula under consideration, the effect of differing service volume measures between rural and urban municipalities and the effect of differing measures of fiscal capacity between rural and urban municipalities are interdependent since fiscal capacity is measured relative to the service volume measures. In the absence of neutral measures between rural and urban municipalities it is not possible to make an equitable allocation of funds between an individual rural municipality and an individual urban municipality.

4.1.1.3 Relative Unit Costs

Assuming expenditure per capita as a measure of cost per unit of service the formula recognizes, in a general way, the relative cost per unit of service for municipalities. It is reasonable to assume that the formula's bias toward rural municipalities in the distribution of funds between urban and rural is based on the underlying assumption that rural municipalities have higher relative costs per unit of services. However, this underlying assumption has not been clearly demonstrated to

be a correct assumption. In fact, there is some evidence to suggest that some urban municipalities (e.g., cities) may be experiencing higher unit costs than most rural municipalities (see Table 5).

In demonstrating relative unit costs of municipal services it is necessary to select a measure of units receiving municipal services and a measure of the cost of municipal services. Population is a common measure of units receiving municipal services and has been used in the formula for urban municipalities. Municipal expenditure is often used as a measure of the cost of municipal services. However, municipal expenditure measures the total cost of a particular volume and set of municipal services which differ substantially among municipalities. Some municipalities provide public transit, sewage treatment, and water whereas others provide little more than roads and rely on private vehicles to meet transportation needs and on private wells and private septic systems to meet the needs for water supply and sewage treatment. The latter is characteristic of most rural municipalities. Table 5 shows a comparison between urban and rural per capita expenditures including urban expenditures on public transit deficits and excluding expenditures on sewer and water systems. Assuming that these expenditures represent comparative costs, rural municipalities experience unit costs approximately 7% lower than do urban areas. The budget allocation on a per capita basis as illustrated in Table 3 indicates a presumption that rural municipalities experience unit costs approximately four times as high as in urban municipalities. Clearly the comparison in Table 5 does not support this presumption.

The formula applied to rural municipalities used a reduced weight-

Table 5

Comparison of Urban and Rural Municipal

Per Capita Expenditure, 1976

(Excluding Summer Villages)

	Net General Operating Fund Expenditure* $000's	Population	Comparative Per Capita Expenditure
Cities	$ 358,630.7	1,083,808	$ 330.90
Towns	62,909.2	269,062	233.79
Villages	8,300.7	47,308	175.46
Urban - TOTAL	$ 429,840.6	1,400,178	$ 306.99
Counties	$ 66,217.3	227,073	$ 291.61
Municipal Districts	26,695.5	91,135	292.92
Rural - TOTAL	$ 92,912.8	318,208	291.99
Urban & Rural - TOTAL	$ 522,753.4	1,718,386	$ 304.21

* "Net" means total expenditures from operating fund less requisitions from other authorities (eg. school and hospital requisitions) and transfers to capital funds. (Utility expenditures are not included). Improvement districts and Special Areas are not included since many high cost services, such as roads, are provided directly by the provincial government in these areas.

ing of townships greater in number than 37 for an individual municipality. This practice increases the equalized assessment per township (the stated relative fiscal capacity measure) and reduces the grants implying that larger rural municipalities (those with over 37 townships) have lower unit costs than smaller rural municipalities (those with 37 or fewer townships). Assuming that expenditures represent uniform measures of municipal service output and assuming population as the measure of service unit, it can be determined from Table 6 that the implied assumption is not appropriate. This table indicates per capita expenditures are higher for large than for small rural municipalities.

The basic formula for recognizing *relative economic need* of urban municipalities provided for variations in per capita assessment standards according to population size of municipality. The formula's use of a higher per capita assessment standard for municipalities with larger populations implies the assumption that larger municipalities have higher unit costs relative to the average for all urban municipalities than do smaller urban municipalities in accordance with the four size ranges of over 400,000, between 25,000 and 400,000, between 3,000 and 25,000 and under 3,000. A higher per capita assessment standard for a large municipality means a larger deficiency from the standard and a higher per capita grant. Assuming that expenditure per capita represents a uniform measure of municipal service cost, a fiscal capacity standard recognizing relative unit cost should vary directly with expenditure per capita. It can be determined from Table 7 that the reverse variation is contained in the formula. For example, cities with population of 400,000 or more experience costs (assumed to be expenditures) per capita 66.4%

Table 6

Comparison of Expenditures Per Township Between Large and Small Rural Municipalities, 1976

(Counties and Municipal Districts)

Size	General Operating Fund Expenditure	Number of Townships	Population	Expenditure Per Township	Per Capita Expenditure
Small - 37 or fewer townships	$41,646,304	676.6	159,234	$61,552.33	$261.54
Large - more than 37 townships	51,264,400	1092.7	158,974	46,915.35	322.47
TOTAL	$92,910,704	1769.3	318,208	$52,512.69	$291.99

Table 7

Comparison of Per Capita Expenditures of Urban Municipalities by Size, 1976
(Excluding Summer Villages)

Population Size	Net General Operating Fund Expenditures*	Population	Per Capita Expenditures	Relative Weight of Expenditures	Relative Weight of Assessment Standards in 1973 Formula
400,000 +	$321,490,180	931,602	$345.09	1.6642	1.2353
25,000 - 400,000	26,563,248	111,761	237.68	1.1462	1.1765
3,000 - 25,000	49,095,856	199,157	246.52	1.1888	1.0882
less than 3,000	32,691,392	157,658	207.36	1.0000	1.0000
TOTAL	$429,840,646	1,400,178	$306.99	n/a	n/a

* "Net" means total expenditures from operating fund less requisitions from other authorities. Utility expenditures other than public transit deficit are excluded.

greater than for towns and villages of less than 3,000 in population whereas, the assessment standards in the 1973 formula imply costs per capita only 23.5% more for these cities.

An additional weakness in the use of these population size categories is that a small difference in population size (e.g., between 2,999 and 3,000) can lead to substantial differences in assessment deficiencies and the grant itself.

4.1.1.4 Interdependence of Variables

The use of higher standards of fiscal capacity for municipalities with larger populations as a factor recognizing lower unit costs of these municipalities has another implication. An urban municipality with a fiscal capacity large enough to disqualify it from a grant based on fiscal capacity is also disqualified from a grant in recognition of relative unit costs. Therefore, the formula implies that relative fiscal capacity and relative unit cost are interdependent. Once again, assuming that expenditures per capita represent a uniform measure of municipal service output and using equalized assessment per capita as a fiscal capacity measure, it can be determined from Table 8 that this interdependency is weak. The regression analysis ($R^2 = .0855$) bears out the hypothesis that fiscal capacity poorly explains unit cost.

4.1.1.5 Duplication of Criteria

In determining the amount calculated under the Municipal Assistance Grant formula, assessment deficiencies were multiplied by the equalized mill rate of the municipality. This mill rate is determined by many

Table 8

Regression Analysis of Per Capita Expenditure
and Per Capita Assessment, 1976
(Urban Municipalities)

Dependent Variable	C	Coefficient of Independent Variable: Equalized Assessment Per Capita	R^2
Expenditure Per Capita	105.681	0.056975	0.0855
	(5.33070)	(4.77693)	

factors including relative fiscal capacity, relative unit costs and the public goods preference of the municipality. Given a standard level of municipal services, it is evident that low relative fiscal capacity or high relative costs per unit of service can result in a higher mill rate for a municipality. However, the use of an individual municipality's mill rate in the formula to recognize these factors is a duplication of the recognition given these factors elsewhere in the formula. Relative fiscal capacity has been recognized in the use of equalized assessment per capita and its deficiency from a set standard. High relative costs per unit of service have also been recognized in variation in fiscal capacity standards for urban municipalities and in the variation in township weighting for rural municipalities. Also, a high mill rate does not necessarily mean high relative unit cost or low relative fiscal capacity. It may also mean a higher level of service resulting from a higher preference for public goods in the municipality. The need for a mill rate in the formula arises from the necessity of applying some rate to the fiscal capacity standard which has been set for each category in order to provide for a standard generation of revenue or to change a grant from a lump-sum grant to a matching grant. This mill rate should be neutral between types and sizes of municipalities where there is no *a priori* reason to expect varying rates of fiscal effort.

4.1.1.6 Explanation of Actual Distribution

Give the stated 1973 Municipal Assistance Grant formula and the 1972 data base used in that formula, the actual 1973 distribution of Municipal Assistance Grants should be readily explained. The extent

to which this was true was tested using simple correlation coefficients between expected and actual grant amounts for both total and per unit amounts.

As indicated in Table 9, the expected 1973 Municipal Assistance Grant (EMAG73) for urban municipalities was strongly correlated with the actual grant (MAG73) with a coefficient of 0.987910. However, the expected per capita amount for urban municipalities (EMAG73PC) was found to be less strongly correlated with the actual per capita amount (MAG73PC). Table 9 indicates a correlation coefficient of 0.834763 in this case. Although the total grant is largely explained by the stated formula, per capita amounts are not as well explained. The weaker correlation in per capita amounts may be due to unstated lump-sum adjustments to the grants of several municipalities.[2] Furthermore, there is some evidence to suggest that the stated budget factor of 0.50963 was not used. Excluding the $2 per capita amount for municipal services, the actual average amount per capita for urban municipalities was $14.90 whereas the expected average amount per capita based on the stated formula (including the budget factor of 0.50963) was $7.13. Since the latter amount per capita is 0.47852 of the former (i.e., very close to 0.50963), it is possible that the budget factor was not used. If this is the case, it partly explains the reduced correlation between actual and expected per capita amounts.

As indicated in Table 10, the expected 1973 Municipal Assistance Grant (EMAG73) for rural municipalities was strongly correlated with the actual grant (MAG73) with a coefficient of 0.865262. The expected per township amount (EMAG73PT) was less strongly correlated with the

Table 9

Correlation Coefficients

Expected and Actual Grants for Urban Municipalities, 1973

(Cities, Towns and Villages)

	EMAG73	EMAG73PC	EMIG73	ETG73
MAG73	0.987910			
MAG73PC		0.834768		
MIG73			0.999910	
TG73				0.999692

Table 10

Correlation Coefficients

Expected and Actual Grants for Rural Municipalities, 1973

(Municipal Districts and Counties)

	EMAG73	EMAG73PT	EMIG73	ETG73
MAG73	0.865262			
MAG73PT		0.765733		
MIG73			0.991808	
TG73				0.644567

actual amount per township as the correlation coefficient was 0.786885.[3] Unlike the urban case, it is uncertain whether the applied formula accurately reflects the stated formula. Limitations in data availability made it impossible to exclude certain townships and their assessments from the observations as was specified under the formula. Therefore, the analysis used 1603.4 weighted townships for rural municipalities (Counties and Municipal Districts) whereas the number stated in the formula was 1412.6. This data limitation will have resulted in inaccurate correlation coefficients unless all rural municipalites were equally affected.

In both urban and rural cases, substantial discrepencies between actual and purported allocations appear with the more serious discrepencies appearing in per unit amounts.

4.1.2 1973 Municipal Incentive Grant

4.1.2.1 Theoretical Base

The Municipal Incentive Grant was determined as a fraction of the 1972 school requisition. The school requsition is a measure of the fiscal capacity, volume of service, unit cost of service, quality of service, and fiscal effort in relation to the <u>education services of school boards</u>. If the grant was intended to relate to <u>municipal</u> *need* then this method assumes that these relative measures are the same for municipalities as for school boards. This assumption is seen as inappropriate when it is recognized that:

(a) school populations vary as a proportion of total municipal populations, from place to place,

(b) factors used in providing education services differ from factors used in providing municipal services, and

(c) fiscal effort for education may differ in degree from fiscal effort for municipal services within a given community.

School requisitions are partly a function of the volume of education service which can be measured by school enrollments. Volume of municipal services can be measured by population. Since school enrollments in proportion to total municipal population varies from place to place, it is reasonable to conclude that the volume of education services in proportion to the volume of municipal services also varies from place to place. Therefore, the 1973 Municipal Incentive Grant formula appears to deviate from equity in recognizing relative volume of municipal service.

Factors used in providing education services differ from factors used in providing municipal services. Ths school requisition does not represent either municipal input factors or the unit cost of municipal services. Therefore, the 1973 Municipal Incentive Grant formula appears not to provide equity in recognizing relative unit cost of municipal services.

The school requisition is partly a function of the unit cost of education services which, in turn, is a function of education input factors. The school requisition has been recognized as a function of volume of education service and of unit cost of education service. It is also a function of the fiscal capacity of the school district. Due to the use of a common tax base in property assessment, a municipality's fiscal capacity is the same as the sum of its' school districts' fiscal

capacities. Therefore, the school requisition is a function of the fiscal capacity of the municipality. However, the school requisition is a function of both fiscal capacity and fiscal effort which are not independent of each other. Fiscal effort, as measured by mill rates on the property tax base, is largely dependent upon fiscal capacity. Therefore, the school requisition is not a measure of relative fiscal capacity of school boards but a measure of relative functions of fiscal capacity and fiscal effort. Although the relative fiscal capacities of municipalities is the same as relative total fiscal capacities of school boards within municipalities, it cannot be said with any certainty that relative fiscal efforts of municipalities are the same as relative total fiscal effort of school boards within municipalities. Relative fiscal effort for education services to children may very well differ from relative fiscal effort of municipal services to property and the general population. In view of the interdependence of fiscal capacity and fiscal effort in school requisitions and in view of fiscal effort variations between school purposes and municipal purposes, the 1973 Municipal Incentive Grant formula does not contain a sound theoretical base for relative fiscal capacities of municipalities.

4.1.2.2. Explanation of Actual Distribution

Given the stated 1973 Municipal Incentive Grant formula and the 1972 data base used in that formula, the actual 1973 distribution of Municipal Incentive Grants should be explained. This was tested using simple correlation coefficients between expected (EMIG73) and actual (MIG73) grant amounts. These grant amounts were almost perfectly

correlated with coefficients of 0.999910, 0.991808 and 0.999853 for urban (Table 9), rural (Table 10) and urban and rural combined (Table 11) respectively. Discrepancies between actual and purported allocations were insignificant.

4.1.3 1973 Total Grant

Given the stated 1973 formulae for Municipal Assistance and Municipal Incentive Grants, expected total grants (ETG73) were measured against actual total grants (TG73). These grant amounts were highly correlated producing coefficients of 0.999692 and 0.644567 for urban (Table 9) and rural (Table 10) respectively.[4] Discrepancies between actual and purported allocations of Municipal Assistance Grants gave rise to the lower correlation for rural municipalites.

4.1.4 1977 Distribution and 1973 Formulae

As mentioned previously, the 1973 Municipal Assistance Grant and the 1973 Municipal Incentive Grant were summed for each municipality and the sum increased by an annual escalation factor common to all municipalities for 1974 and subsequent years. The amount summed and escalated became known as the Municipal Assistance Grant. It has also been mentioned that changes in the data base since 1973 have not been recognized in the distribution of funds since that time under the Municipal Assistance Grant except for the 1977 addition of an unconditional *growth grant* (to be computed annually) being provided to adjust for year to year population growth.[5] The effect of this adherence to the data base for the 1973 distribution and addition of the growth

Table 11

Correlation Coefficients
Expected and Actual Municipal Incentive Grants for
Urban and Rural Municipalities, 1973 and 1977

	EMIG73	EMIG77
MIG73	0.999853	
MIG77		0.999150

grant was analyzed by comparing the 1977 distribution of grants to distribution based on the original 1973 formulae with assessment standards updated where appropriate. Assessment standards were determined on the basis of 1976 data in the same manner as standards in the 1973 formula were determined on the basis of 1972 data. These are indicated in Table 12. All variables were measured using 1976 data in the same way as had been done for the previous analyses of 1973 actual and expected grants. The analysis was conducted separately for each of the Municipal Assistance Grant formula and the Municipal Incentive Grant formula. The 1977 grant amount (MAG77) related to the Municipal Assistance Grant formula was the sum of:

(a) the 1973 Municipal Assistance Grant multiplied by the factor of 1.6147725 which represents the compound effect of the 1974-77 grant escalation factors listed in Chapter III, and

(b) the 1977 Growth Grant.

The 1977 grant (MIG77) amount related to the Municipal Incentive Grant formula was the 1973 Municipal Incentive Grant multiplied by the factor of 1.6147725. For each municipality the sum of these two 1977 amounts is equivalent to the grant which has become known as the Municipal Assistance Grant. Each of these two amounts was treated as the actual amount of the grant under its respective formula.

For urban municipalities the expected 1977 Municipal Assistance Grant (EMAG77) and the actual grant (MAG77) were highly correlated with a coefficient of 0.932416 (Table 13). This compares to a coefficient of 0.987910 (Table 9) for 1973 grants (EMAG73 and MAG73). The correl-

Table 12

Average Assessment Standards

(Based on Method from 1973 Municipal Assistance Grant Formula)

Urban

Population	Average Per Capita Equalized Assessment 1976	Average Per Capita Equalized Assessment 1973
Over 400,001	$3050	$2100
25,001 - 400,000	2450	2000
3,001 - 25,000	2250	1850
Under 3,000	2050	1700

Rural

	Average Per Township Equalized Assessment 1976	Average Per Township Equalized Assessment 1973*
Counties and Municipal Districts	$683,116	$540,420

* Varies from average of $428,450 stated in 1973 formula due to absence of data to permit exclusion of certain types of low and high assessment townships.

Table 13

Correlation Coefficients

Expected and Actual Grants for Urban Municipalities, 1977

(Cities, Towns and Villages)

	EMAG77	EMAG77PT	EMIG77	ETG77
MAG77	0.932416			
MAG77PC		0.527144		
MIG77			0.999696	
TG77				0.996230

ation of 1977 amounts per capita (EMAG77PC and MAG77PC) were also less correlated than was the case in 1973 (i.e. for EMAG73PC and MAG73PC). Table 13 indicates a coefficient of 0.527144 for 1977 compared to a coefficient of 0.834768 for 1973. For rural municipalities the correlation of expected and actual Municipal Assistance Grants similarily declined. Total grants were less correlated in 1977 (EMAG77 and MAG77) than in 1973 (EMAG73 and MAG73) with a 1977 coefficient of 0.557372 (Table 14) as compared to a 1973 coefficient of 0.786368 (Table 10). Grants per township (EMAG77PT and MAG77PT) produced a correlation coefficient of 0.477497 (Table 14) as compared to 0.765732 (Table 10). Declines were also observed in the correlation of expected and actual Municipal Incentive Grants although these declines were not as significant as for Municipal Assistance Grants. Tables 9 and 13 indicate that correlation declined from 0.999910 to 0.999696 for urban municipalities between 1973 and 1977. Tables 10 and 14 indicate a decline from 0.991808 to 0.973469 for rural municipalities. For urban and rural municipalities combined correlation (Table 11) declined from 0.999853 to 0.999150.

As indicated above, the method for distributing Municipal Assistance Grants was less adhered to in 1977 than in 1973 particularly in respect of per unit variations.[6] However, the actual distribution of total grants remains highly correlated with amounts produced by the original formulae for both Municipal Assistance Grants and Municipal Incentive Grants.

Table 14

Correlation Coefficients

Expected and Actual Grants for Rural Municipalities, 1977

(Municipal Districts and Counties)

	EMAG77	EMAG77PT	EMIG77	ETG77
MAG77	0.557372			
MAG77PT		0.477497		
MIG77			0.973469	
TG77				0.559406

4.2 An Evaluation of Conditional Grants

The theory of grants indicates that conditional grants are prescribed as an incentive for municpal government decision makers to account for external effects when providing a municipal service. In evaluating a conditional grant it is necessary to determine:

(a) the existence of an externality in respect of which the grant is made, and

(b) the feasibility of joint action in preventing inefficiencies resulting from the externality.

Quantification of the excess of external costs over benefits is the basis for determining required levels of conditional grants. However, the complexity of external cost and benefit measurement and limited available data has placed such measurement beyond the scope of this paper.

4.2.1 Transportation

Several types of conditional grants are made by Alberta Transportation to urban municipalities in respect of roadway construction or maintenance. The existence of external effects on urban municipalities resulting from traffic generated from other jurisdictions is obvious. In view of the large number of other jurisdictions generating this traffic it is not considered feasible for joint action to take place to prevent inefficiencies. The grant programs most readily defensable with this rationale are:

(i) highway corridor program for Edmonton and Calgary,

(ii) arterial roadway construction in cities,

(iii) improvement of railroad crossings on roads under municipal jurisdiction (excluding cities),

(iv) analysis of feasibility of railway relocation in urban centres,

(v) providing new or upgrading existing airports,

(vi) improvement and maintenance of roads in Municipal Districts and Counties,

(vii) long-term highway route planning by cities,

(viii) street improvement in towns and villages, and

(ix) highway maintenance in small cities.

These programs all relate to facilities which are used by non-residents from a sufficiently large number of municipalities so as to make joint action infeasible. Although these programs fit the basic criteria for conditional grants, they do rely on some questionable assumptions regarding the relationship of subsidy amounts and the degree of external effects. Programs restricted to cities appear to assume that large towns do not require grants until they are incorporated as cities. Also, primary highway maintenance grants are restricted to cities with a population under 100,000. This appears to assume that external costs of maintaining roads cease when a city reaches a population of 100,000. In recognition of external effects, the province provides capital grants for construction of major roadways on primary highway routes through Edmonton and Calgary. However, in spite of the existence of external operating costs of maintenance for these routes, Edmonton and Calgary are ineligible for maintenance grants because of having populations in excess of 100,000.

Provincial assistance for enlarging and maintaining streets may rely on the rationale of compensation for the direct costs of externally generated traffic where it is assumed that the number of external users is large. However, this cannot be said for grants-in-aid of public transit. Generally, it is only persons within a municipality who use that municipality's public transit. Therefore, the construction and operation of public transit is an internal service without direct external costs. Nonetheless, public transit may be viewed, in part, as an alternative to the construction and operation of larger traffic arteries to accommodate externally generated traffic. In other words, the use of public transit by a municipality's residents will enable existing streets and roads to accommodate externally generated traffic. Based on this assumption, it may be stated that the following grant programs also entail recognition of an externality:

(i) studies by cities of public transit system development,

(ii) operating deficit of city public transit facilities, and

(iii) establishment or improvement of urban public transit.

As in the case of grants for roads, the large number of jurisdictions involved in the external effect recognized makes joint action infeasible. However, in all such cases, there is some question as to whether the degree of externality in eligible municipalities justifies the amount of the subsidy.

4.2.2 Recreation and Culture

Recreation grants are made for the construction of recreational facilities and for the operation of some municipally operated recreation

programs. External benefits of recreational facilities, where they exist, can be offset by higher user fees for non-residents or joint construction and operation by municipalities. There appears to be little need for these grants in order to prevent inefficient levels of service. Furthermore, the present situation is that capital grants change the price of capital programs relative to non-capital programs due to the absence of operating grants for these facilities. This can have the effect of municipalities building facilities with burdensome operating expenses or of choosing capital intensive programs at the expense of labor intensive programs.

Culture grants are made for museum and library services which are of an educational nature. It is generally accepted that education has substantial benefits external to the community providing the educational service and that the number of external communities is large but indeterminate. This would also appear to be the case for the services of museums and libraries which are also educational.

4.2.3 Protective Services

As in the case of Public Health and Welfare, there are external effects related to police services. It is obvious that local policing costs are incurred in the apprehension of criminals and traffic offenders from outside municipal boundaries. Provincial grants to municipalities providing policing services are then suitable to encourage the provision of an efficient level of police service.

4.2.4 Public Health and Welfare

All grant programs in this area appear to recognize some form of

externality which, because of the indeterminate number of jurisdictions involved, makes joint action infeasible. All social service programs can be said to be of benefit to persons outside the boundaries of the municipality providing the service. These programs which affect the social and economic contribution of adults as well as the conduct of juveniles benefit other jurisdictions in preventing costs which may arise in the absence of the social service. For example, the municipality providing care and supervision of neglected or delinquent children is preventing present and future costs to other jurisdictions.

4.2.5 Environmental Development

Municipal programs performing the function of environmental development include many programs of an educational nature primarily involving persons engaged in agricultural production. Grants for these programs may be rationalized as grants for education having benefits external to the municipality. These educational programs involve agricultural fieldman, soil conservation, crop production, land use, management of field crops, and others.

Other environmental development grants are for water management and for land reclamation. However, these programs appear to provide benefits usually internal to the municipality undertaking the project and appear to be inappropriate objects for provincial grants. Where benefits are not internal, interjurisdictional agreement is often possible.

4.2.6 Fiscal Services

It has not been demonstrated that the capital borrowings of an Alberta municipality have an external effect on other Alberta municipal-

ities. A demonstration of this effect is necessary to establish that inefficient levels of municipal capital investment would take place in the absence of interest subsidy grants. If it is assumed that this external effect cannot be demonstrated, then the effect of interest subsidy grants is not a Pigouvian subsidy but a change in the relative price between capital and non-capital public services and as a shift of municipal costs to the province.

4.2.7 Environmental Health

It is apparent that in the long term, insect infestation, disease and pollution know no municipal boundaries. Therefore, when these problems are dealt with by a municipality, benefits will accure within other municipalities as well. In view of the numerous municipalities benefitting from control programs in one municipality, provincial grants in this area appear appropriate to encourage an efficient program level.

4.3 Alternatives to Existing Conditional Grants

Several conditional grants are made for programs subject to readily apparent external effects. However, exclusions of certain types and sizes of municipalities from grant eligibility limit the potential for grant-induced efficiency and could be causing inefficiencies of their own. Specific alternatives to existing eligibility limits are:

(a) to extend capital roadway grants for cities to all municipalities where external costs are incurred, and

(b) extend primary highway route maintenance grants to all municipalities where external costs are incurred.

Although many conditional grants such as those for public health and welfare, culture and environmental development are made for programs subject to readily apparent external effects, it was indicated in Chapter II that reassignment of these responsibilities to a higher level of government might be a more efficient solution. However, where political constraints do not permit the reassignment we remain with conditional grants as the "second-best" solution.

A number of conditional grants are also made for programs either subject to no apparent external effects or subject to external effects for which joint action is feasible. As previously indicated, many water management and land reclamation projects provide benefits which are entirely internal to the municipality. Recreation program grants rely on the assumption of external effects for which joint action is not feasible. However, non-resident user fees and joint construction and operation are alternatives which have been found to be feasible.

Those conditional grants for programs for which it has been indicated that external costs are not apparent amounted to approximately $21 million in 1976-77. The termination of these grants as conditional grants would remove their present effect of distorting relative prices of public goods. The addition of the sum of $21 million to the unconditional grant program would facilitate greater equalization of fiscal capacities and unit costs.

4.4 1977 Unconditional Grants As Equalizing Grants

In Table 15, it is indicated that the 1977 average unconditional grant per capita in counties and municipal districts ($62.03) is sub-

Table 15

Comparison of Urban and Rural Municipal Assistance Grants, 1977
(Per Capita Basis)

	1977 Municipal Assistance Grants	Population	Grants Per Capita
Urban:	$36,220,668	1,400,178	$25.87
Cities	24,282,992	1,083,808	22.41
Towns	9,936,470	269,062	36.93
Villages	2,001,206	47,308	42.30
Rural:			
Counties and Municipal Districts	19,739,824	318,208	62.03
Improvement Districts and Special Areas	3,743,331	74,880	49.99
TOTAL: Urban and Rural	$59,703,823	1,793,266	$33.29

stantially higher than in urban municipalities ($25.87). It is also indicated that cities, towns and villages receive varying average amounts per capita of $22.41, $36.93 and $42.30 respectively. The general question exists as to what extent differentials in actual grant amounts reflect differentials in relative fiscal capacity, relative cost per unit of service and relative volume of service units. In the following chapter, this question is explored in relation to the actual 1977 distribution of unconditional grants and in relation to several alternatives for distribution of unconditional grants.

4.5 Summary and Conclusions

The formulae upon which the 1977 distribution of unconditional grants is purportedly based contain elements which recognize the theoretical factors of relative volume of service units, relative fiscal capacity and relative cost per unit of service. However, these factors are recognized inconsistently among different classes of municipalities. Furthermore, the stated formulae fall short of explaining the 1973 distribution and the 1977 distribution is even further removed due to unrecognized changes in the relative factors between 1973 and 1977. Several conditional grants made in 1977 appear less suited as Pigouvian subsidies than as unconditional grants.

Footnotes

[1]It is also apparent that the limit on farmland assessment gives rise to a distortion in equalized assessment between urban and rural municipalities. However, since urban and rural municipalities are under different formulae grants are not affected.

[2]An ordinary least squares regression analysis using MAG73PC as dependent variable and the stated criteria as independent variables supports this possibility since the value of R^2 was significantly less than one, ie. $R^2 = 0.6692$.

[3]The Municipal Services grant of $20 per mile of district road has been assumed to have been paid as purported and is excluded from the analysis of township amounts.

[4]Coefficients for urban and rural combined were not computed since formulae differed between urban and rural for Municipal Assistance Grants.

[5]It is assumed that the "growth grant" was implemented to compensate for the absence of growth differentials in the 1974-76 distribution of grants originating in the 1973 Municipal Assistance Grant.

[6]It is assumed that township and assessment data bias for rural grants did not vary between 1973 and 1977.

Chapter V

EXISTING GRANTS AND EQUALIZATION ALTERNATIVES

As stated previously, the three relative factors of volume of service units, fiscal capacity and cost per unit of service serve as the basic determinants of *equalizing* unconditional grants. This chapter examines the extent to which differentials in these factors are reflected in the existing grant distribution and in alternative grant distributions.[1]

5.1 Selection of Measures of Relative Factors

In order to determine the extent to which a grant distribution is *equalizing*, measures for the three determining factors were developed. To recognize equity in terms of relative volume of service units it is useful to recognize volume of service units as output rather than input. An exact measure of volume of service output is not available and, in the absence of such a measure, population is commonly used. The national governments of the United States, Canada and Australia use this measure in distributing funds to lower level governments.[2] Population (POP76) based on 1976 municipal census is used in the following analysis.

The most appropriate measure of cost per unit of service would be a cost index representing differences among municipalities in respect of factor prices and circumstances (eg. geography) but excluding differences in efficiency among municipalities. However, such an index is not available due to the problem of excluding inefficiencies and of

determining a standard *bundle of goods* provided by municipalities. General operating expenditures per capita (EXPPC) has been used in developing a proxy for this index. In order to limit the effect of varying composition of municipalities *bundle of goods* utility expenditures have been excluded and public transit deficits have been included. The purpose of these adjustments is to limit the effect of varying preferences between public and private services among municipalities (i.e. between urban and rural). All other inter-fund transfers have been excluded in order to limit the irregular effects of capital reserve accumulations and capital expenditures and to remove the effect of requisitions collected for other authorities. This use of expenditures assumes that expenditures represent services which are both justified and efficiently provided.[3]

Two basic measures of fiscal capacity appear evident. The first of these is property assessment per capita as used in the 1973 Municipal Assistance Grant formula for urban municipalities. This measure is one which indicates tax base per capita for a municipality in relation to other municipalities measured by property wealth. In order to assure neutrality between types of municipalities this measure of fiscal capacity should:

(a) be used for both urban and rural municipalities,

(b) include assessment for all townships, and

(c) contain an adjustment for the fact that urban land assessment is based on market value while rural farm land assessment is not based on market value.

This measure of relative fiscal capacity is considered here in preference to equalized assessment per township. Assessment per township represents

fiscal capacity in relation to area, possibly an indicator of cost of service inputs.[4] However, as indicated in Table 16, expenditures are strongly correlated with population and weakly correlated with area for rural municipalities which have a low population density.

Property assessments vary among municipalities in terms of their market value bases. Therefore, as in the case of the 1973 Municipal Assistance Grant formula, *equalized* assessment must be used as a measure of property assessment to neutralize these differences in market value base. However, as stated in the previous chapter, farmland assessment is unaffected by market value in the process of assessment equalization resulting in a measure which is not neutral between farmland and non-farmland. Therefore, for this paper, *equalized* assessment has been adjusted based on a mix of actual and approximate farmland market values for each county and municipal district. Similar adjustments have not been made for urban farmland since it is not considered to be a significant proportion of urban property. As a result of the adjustments made to *equalized* assessment, there are two variations of the measure of relative fiscal capacity based on property assessments:

(i) *equalized* assessment per capita (EAPC), and

(ii) *adjusted* equalized assessment per capita (AEAPC).

The second readily apparent fiscal capacity measure is income per capita. This measure is normally positively correlated with property assessment per capita but important divergences can occur raising the concern regarding tax burden in relation to income. Although income per capita may generally be highly correlated with property assessment per capita, it is possible that this may not be the case for a number

Table 16

Correlation of Expenditure and Selected Variables, 1976
(Counties and Municipal Districts)

	Correlation Coefficients
	Expenditure
Population	0.953198
Area	0.092232

of individual municipalities. For example, in any given year farm income per capita may be low in a rural municipality due to depressed prices or poor crops while property assessment per capita is relatively high for a rural municipality. For this municipality a grant based on property assessment per capita would be low and could produce a high tax burden in relation to the municipality's per capita income. In order to eliminate this type of effect, available data on average income per tax return for the region is offered as a proxy for income per capita.

Municipal income data (unpublished) was recently made available by Revenue Canada with the co-operation of the Alberta Bureau of Statistics.[5] The data was based on a large sampling of tax returns in each municipality of the province. Unfortunately, for most rural areas, income is reported with the income of the neighboring town or village. As a result, average income data outside the cities has been aggregated for each region lying within the perimeter of a municipal district or county. This average income was assumed to represent average income for each municipality, urban or rural, within the region. Average income data available consisted of:

(a) average income per tax return with taxable income, and

(b) average income per tax return with or without taxable income.

The first is more representative of the average income of employed persons and the second is more representative of average income of all tax-filers. For purposes of simplicity, one measure, average income from taxable returns (AITR), has been selected for the following analysis. In order for this average to represent fiscal capacity (measured on a per capita basis), it must be assumed that it reasonably

represents per capita income.

Each measure of service volume, cost per unit and fiscal capacity is correlated with the existing Alberta grants distribution and several alternatives in order to determine the equalization features of each method as applied to urban (cities, towns and villages) and rural (counties and municipal districts) municipalities. It is expected that an *equalizing* grant be positively correlated with the measure of service volume (POP76) since the grant should vary directly with the service volume. Similarly, it is expected that an *equalizing* grant per unit of service be positively correlated with the measure of cost per unit of service. Conversely, it is expected that an *equalizing* grant per unit of service be negatively correlated with fiscal capacity per unit of service (EAPC, AEAPC or AITR) since the grant per unit should be lower for a municipality with a high fiscal capacity. Both the existing distribution and the alternatives are first examined in terms of their simple correlation with these measures in order to determine general characteristics of these distributions. An examination of multiple correlations is deferred to section 5.4 in which all distributions are compared.

5.2 Equalization Under 1977 Unconditional Grants and Conditional Grants

As indicated in Chapter IV, a substantial amount of conditional grants could not be identified with the presence of externalities that could justify these grants as Pigouvian subsidies. Therefore, these grants could be creating equalizing or disequalizing effects. For this reason both unconditional and conditional grants paid to Alberta's

municipalities are considered in determining the relationship between actual grants and the three relative factors serving as the determinants of equity.

In the following analysis unconditional grants (TUG77) consist of the Municipal Assistance Grant inclusive of its Growth Grant and Municipal Incentive Grant components. Conditional operating grants (COG77) consist of all conditional provincial grants for municipal operating purposes (i.e. excluding education grants in the case of counties). To reduce the effect of uneven distribution of capital grants from year to year, conditional capital grants (ACG) represents an average of conditional capital grants for the years 1973-77. The total of unconditional and conditional grants is the sum of these three types (denoted ASH).

The distribution of each grant type among types of municipalities is shown in Table 17. Urban municipalities receive 64.7% of unconditional funds and a greater share (76.5%) of total funds due to their receipt of 97.1% of capital grants. Cities receive the largest share of each grant type. Rural municipalities receive as much as 35.3% of unconditional grants and as little as 2.9% of capital grants. Details of grant amounts for each municipality are shown in Appendix A. However, to facilitiate later comparisons with alternatives, each grant type is expressed as a share of the total funds for the type and as a share per capita and correlated with the previously described measures of relative volume of service units (POP76) relative cost per unit of service (EXPPC) and relative fiscal capacity (EAPC, AEAPC and AITR).

As indicated by the coefficients in excess of 0.96 in line (1) of Table 18, all grant shares, conditional and unconditional, were

Table 17

Actual Distribution of Provincial Grants

	*1977 Unconditional		1977 Conditional Operating		Average of 1973-1977 Conditional Capital		Total	
	$	%	$	%	$	%	$	%
Cities - Total	24,910,470	44.5	49,100,641	60.5	43,372,105	77.5	117,383,216	60.8
Cities - Calgary	10,659,040	19.0	18,476,000	22.8	15,403,581	27.5	44,538,621	23.1
Edmonton	9,840,295	17.6	21,791,000	26.8	22,094,768	39.5	53,726,063	27.8
Other	4,411,135	7.9	8,833,641	10.9	5,873,756	10.5	19,118,532	9.9
Towns	9,308,992	16.6	6,754,375	8.3	5,739,138	10.2	21,802,505	11.3
Villages	2,001,206	3.6	1,295,275	1.6	5,246,825	9.4	8,543,306	4.4
Total - Urban	36,220,668	64.7	57,150,291	70.4	54,358,068	97.1	147,729,027	76.5
Counties	13,445,533	24.0	18,566,768	22.9	1,560,555	2.8	33,572,856	17.4
Municipal Districts	6,294,294	11.3	5,426,891	6.7	48,374	0.1	11,769,559	6.1
Total - Rural	19,739,827	35.3	23,993,659	29.6	1,608,929	2.9	45,342,415	23.5
Total - Urban & Rural	55,960,495	100.0	81,143,950	100.0	55,966,997	100.0	193,071,442	100.0

* Amounts for a municipal category may differ from Table 15. This table reflects the 1977 classification of a municipality whereas Table 15 reflects the 1976 classification. For example, the Town of St. Albert became the City of St. Albert in 1977.

Table 18

Correlation Between Existing Municipal Grants
and Measures of Service Volume, Unit Cost and Fiscal Capacity
(Urban and Rural Municipalities)

	1977 Unconditional (TUG77)	1977 Conditional Operating (COG77)	1973 - 77 Average Conditional Capital Grant (ACG)	Total Unconditional and Conditional (ASH)
Grant Share				
(1) POP76	0.988742	0.982917	0.967914	0.989575
Share Per Capita				
(2) EXPPC	0.419725	0.338474	-0.043895	-0.019843
(3) EAPC	0.412085	0.299902	-0.027643	-0.005431
(4) AEAPC	0.513480	0.355869	-0.029305	-0.002401
(5) AITR	0.070192	0.000465	-0.018578	-0.001700

strongly correlated with service volume (POP76) for urban and rural municipalities combined indicating large grant shares for heavily populated municipalities. Correlation was found to be strong and positive between grant share per capita and unit cost measure (EXPPC) for unconditional and conditional operating grants indicating large per capita shares for municipalities with high per capita expenditure. However, this correlation was very weak for capital and total grants (Table 18, line (2)). Strong and positive correlation was also found between fiscal capacity measures EAPC and AEAPC (see Table 18, line (3) and (4)) and unconditional and operating grant shares per capita indicating larger shares per capita for municipalities with larger fiscal capacities. Conditional capital and total shares per capita were weakly (near zero) and negatively correlated with these fiscal capacity measures. The average income measure (AITR) was weakly correlated with shares per capita of all grant types.

All grant shares for urban municipalities as a group were strongly correlated (Table 19, line (1)) with service volume (POP76) for all grant types as coefficients were in excess of 0.97 indicating large grant shares for heavily populated urban municipalities. Shares per capita were all weakly correlated with the factors except for correlation of -0.362 between EAPC (also AEAPC, the same for urban municipalities) and unconditional share per capita. Grant shares for rural municipalities were not as strongly correlated with service volume (POP76) as coefficients ranged from 0.345 to 0.607 (Table 20, line (1)) depending upon the type of grant. Except for unit cost (EXPPC) all factors were weakly correlated with grant shares per capita. This

Table 19

Correlation Between Existing Municipal Grants
and Measures of Service Volume, Unit Cost and Fiscal Capacity
(Urban Municipalities)

	1977 Unconditional (TUG77)	1977 Conditional Operating (COG77)	1973 - 77 Average Conditional Capital (ACG)	Total Unconditional and Conditional (ASH)
Grant Share				
(1) POP76	0.996751	0.986493	0.971105	0.991150
Share Per Capita				
(2) EXPPC	-0.076767	0.076471	-0.035403	-0.033605
(3) EAPC	-0.362125	-0.057613	-0.009919	-0.015900
(4) AEAPC	-0.362125	-0.057613	-0.009919	-0.015900
(5) AITR	0.040850	0.005115	-0.021724	-0.021106

Table 20

Correlation Between Existing Municipal Grants
and Measures of Service Volume, Unit Cost and Fiscal Capacity
(Rural Municipalities)

	1977 Unconditional (TUG77)	1977 Conditional Operating (COG77)	1973 - 77 Average Conditional Capital (ACG)	Total Unconditional and Conditional (ASH)
Grant Share				
(1) POP76	0.590050	0.424550	0.345627	0.606992
Share Per Capita				
(2) EXPPC	0.622002	0.390330	-0.104969	0.489464
(3) EAPC	0.092605	-0.135163	-0.102698	-0.054286
(4) AEAPC	0.106492	-0.158077	-0.229304	-0.087510
(5) AITR	0.162455	-0.003211	-0.212842	0.029360

factor was strongly correlated with unconditional, conditional operating and total share per capita with coefficients ranging from 0.390 to 0.622 (line (2)).

Shares for all grant types were strongly correlated with service volume (POP76). However, unconditional grant shares per capita as distributed among urban and rural municipalities combined were larger for municipalities with large fiscal capacities. Among urban municipalities unconditional grant shares per capita did not vary significantly in relation to unit cost. Among rural municipalities unconditional grant shares per capita did not vary significantly in relation to fiscal capacity. Conditional operating grant shares per capita among urban and rural municipalities combined were larger for municipalities with larger fiscal capacities. Among urban municipalities these grant shares per capita did not vary significantly according to either unit cost or fiscal capacity. Among rural municipalities these grant shares per capita were only weakly and negatively correlated with fiscal capacity. Capital grant shares per capita were generally weakly correlated with both unit cost and fiscal capacity.

3.3 Alternative Methods of Unconditional Grant Distribution

Several apparent inequities in Alberta's grant distribution and its underlying formulae have been noted. This section presents six alternatives to the present distribution and relates their application to the same equity factors against which the existing distribution was measured. Alternatives to be presented include five existing methods and one variation and are:

(1) distribution based on service volume, fiscal capacity and tax effort measures (U.S. Revenue Sharing Model),

(2) distribution based directly on service volume, fiscal capacity and unit cost measures,

(3) distribution based on 1973 Municipal Assistance Grant formula,

(4) distribution based on 1973 Municipal Assistance Grant and Municipal Incentive Grant formulae,

(5) distribution based on revenue deficiencies (Saskatchewan revenue sharing formula), and

(6) distribution based on the recently introduced Alberta *fiscal capacity component*.

The distribution under each of these methods is expressed in terms of shares of total funds in order to facilitate ready comparisons with the existing distribution and among alternatives without regard to differences in amount of funds allocated. It has been noted in section 5.2 that there is no apparent evidence to support many existing conditional grants as Pigouvian subsidies. It may be more equitable to pool many (if not all) conditional grants with existing unconditional grants for distribution according to an equalizing alternative. Therefore, each of the alternatives in the following sections is presented in comparison to the existing distributions of both unconditional and total grants.

The one fiscal capacity measure selected for general use in the following alternative formulae is equalized assessment per capita (EAPC) since this measure was not subject to the estimates and assumptions required for AEAPC and AITR. However, the latter measures are used as

factors to which each alternative distribution is related. These relationships are used as indicators of the equity limitations in Alberta's general use of equalized assessment per capita as a measure of fiscal capacity.

5.3.1 Distribution Based on Service Volume, Fiscal Capacity and Tax Effort Measures

This method distributes allocated funds on the basis of service volume, fiscal capacity and tax effort combined in a multiplicative fashion. It is essentially the same as the Senate formula under the U.S.- Government revenue-sharing plan for states and local government.[6] The formula differs in application from the U.S. Senate formula in terms of its measures of fiscal capacity and tax effort due to data limitations. The basic form of the formula applied to the provincial-municipal level is:

$$\text{Grant Share to Municipality } i \ (\text{USSH}_i) = \frac{\left(\dfrac{\text{PAFC}}{\text{FCM}_i} \cdot \text{TEM}_i \cdot \text{SVM}_i\right)}{\sum\limits_{\text{All } i} \left(\dfrac{\text{PAFC}}{\text{FCM}_i} \cdot \text{TEM}_i \cdot \text{SVM}_i\right)}$$

where FCM_i = fiscal capacity of municipality i,

PAFC = provincial average municipal fiscal capacity,

TEM_i = tax effort of municipality i, and

SVM_i = service volume of municipality i.

Since the term PAFC is a constant term in both the numerator and the denominator, this equation can be reduced to:

$$\text{Grant share of Municipality } i \ (\text{USSH}_i) = \frac{\left(\dfrac{\text{TEM}_i \cdot \text{SVM}_i}{\text{FMC}_i}\right)}{\sum_{\text{All } i} \left(\dfrac{\text{TEM}_i \cdot \text{SVM}_i}{\text{FCM}_i}\right)}$$

Substituting the equalized municipal mill rate (NMRF) as a measure of tax effort, equalized assessment per capita (EAPC) as a fiscal capacity measure and population (POP76) as a service volume measure this formula becomes:[7]

$$\text{Grant share of Municipality } i \ (\text{USSH}_i) = \frac{\left(\dfrac{\text{NMRF}_i \cdot \text{POP76}_i}{\text{EAPC}_i}\right)}{\sum_{\text{All } i} \left(\dfrac{\text{NMRF}_i \cdot \text{POP76}_i}{\text{EAPC}_i}\right)}$$

This formula assigns one-third of the weight to each of population, equalized mill rate (tax effort) and the inverse of equalized assessment per capita (fiscal capacity).[8] The purpose of the inclusion of the tax effort variable in the formula is to add the requirement for matching by local funds. However, as noted in Chapter II, this provision may distort the relative prices of public and private goods.

Allocation of funds under this formula (see Table 21) would result in cities receiving 59.7%, towns 23.1%, villages 5.1%, counties 8.5% and municipal districts 3.6%. In other words, urban municipalities would receive 87.9% and rural municipalities would receive 12.1%. This

Table 21

Distribution Based on Specified Service Volume, Fiscal Capacity and Tax Effort Measures
(U.S. Revenue Sharing Approach)

		Percentage Shares	
Cities		59.7	
Calgary	26.2		
Edmonton	22.0		
Other	11.5		
Towns		23.1	
Villages		5.1	
Urban - Total			87.9
Counties		8.5	
Municipal Districts		3.6	
Rural - Total			12.1

compares to the 1977 urban/rural split of unconditional grants of 64.7% and 35.3% and of all grants (including the 1973-77 average of capital grants) of 76.5% and 23.5% (see Table 17). Assuming re-allocation of either the unconditional grant total or the total of all grants on the basis of this formula, towns would be the primary beneficiaries of the shift in funds from rural to urban. This formula allocates 23.1% to towns (Table 21) compared to their existing share of 16.6% of unconditional grants and 11.3% of total grants (Table 17). Shares for each municipality are shown in Appendix B.

In correlation with the relative factors established in section 5.1 this distribution produces mixed results. In Table 22, line (1) share correlation with population is strong for urban or rural with a range of 0.734 to 0.995 due to the specific inclusion of the population variable. Similarly, in lines (3) and (4) correlation with equalized assessment per capita, unadjusted (EAPC) or adjusted (AEAPC), is strongly and negatively correlated for both urban and rural. Average income is weakly and negatively correlated for all categories. Correlation between grant share per capita and the cost measure (EXPPC) is weak or negative (line (2), Table 22). Therefore, this formula generally produces greater shares for the more populated municipalities and greater per capita shares for municipalities with lower per capita expenditures and lower fiscal capacities.

5.3.2 Equalization Based on *Indexing* of Service Volume, Fiscal Capacity and Unit Cost

A second alternative for grant distribution is to determine a

Table 22

Correlation Between Municipal Grants and Specified Measures of Service Volume, Unit Cost and Fiscal Capacity

(Distribution Based on Service Volume, Fiscal Capacity and Tax Effort Measures)

	Urban and Rural	Urban	Rural
Total Share			
(1) POP76	0.994116	0.995527	0.734080
Share Per Capita			
(2) EXPPC	-0.227934	0.080289	-0.418615
(3) EAPC	-0.661399	-0.611466	-0.784462
(4) AEAPC	-0.589103	-0.611466	-0.678367
(5) AITR	-0.083120	-0.049039	-0.410279

municipality's share of allocated funds as being directly proportional to service volume and relative unit cost and inversely proportional to relative to relative fiscal capacity. This method is similar to the U.S. Senate formula in section 5.3.1 but replaces the tax effort variable with a unit cost variable. The basic form of this formula is:

$$\text{Grant share to Municipality } i \ (\text{INDEXSH}_i) = \frac{\left(\dfrac{\text{PAFC}}{\text{FCM}_i} \cdot \dfrac{\text{UCM}_i}{\text{PAUC}} \cdot \text{SVM}_i\right)}{\sum\limits_{\text{All } i}\left(\dfrac{\text{PAFC}}{\text{FCM}_i} \cdot \dfrac{\text{UCM}_i}{\text{PAUC}} \cdot \text{SVM}_i\right)}$$

where FCM_i = Fiscal capacity of municipality i,

PAFC = Provincial average municipal fiscal capacity,

UCM_i = Unit cost of municipality i,

PAUC = Provincial average municipal unit cost, and

SVM_i = Service volume of municipality i.

Since the terms PAFC and PAUC are constant in both the numerator and denominator, this equation can be reduced to:

$$\text{Grant share to Municipality } i \ (\text{INDEXSH}_i) = \frac{\left(\dfrac{\text{UCM}_i \cdot \text{SVM}_i}{\text{FCM}_i}\right)}{\sum\limits_{\text{All } i}\left(\dfrac{\text{UCM}_i \cdot \text{SVM}_i}{\text{FCM}_i}\right)}$$

Substituting expenditure per capita (EXPPC) as a unit cost measure, equalized assessment per capita (EAPC) as a fiscal capacity measure and population (POP76) as a service volume measure this formula becomes:

$$\text{Grant share to Municipality } i \ (\text{INDEXSH}_i) = \frac{\left(\dfrac{\text{EXPPC}_i \cdot \text{POP76}_i}{\text{EAPC}_i}\right)}{\sum_{\text{All } i}\left(\dfrac{\text{EXPPC}_i \cdot \text{POP76}_i}{\text{EAPC}_i}\right)}$$

This formula assigns one-third of the weight to each of population expenditure per capita and the inverse of equalized assessment per capita. Allocation of funds under this formula (see Table 23) would result in cities receiving 64.8%, towns 16.6%, villages 3.3%, counties 10.8% and municipal districts 4.5%. The resulting urban/rural split is 84.7% and 15.3% compared to the 1977 unconditional urban/rural split of 64.7% and 35.3% and the urban/rural split of 76.5% and 23.5% for all grants (see Table 17). The cities' share increases substantially to 64.8% from 44.5% for actual unconditional and 60.8% for all grants. Shares for individual municipalities are shown in Appendix C.

For both urban and rural groups grant shares are strongly and positively correlated with population (Table 24, line (1)). Strong and positive correlation was present between share per capita and EXPPC for urban and urban and rural combined (line (2)). However, the correlation between rural per capita share and EXPPC was substantially

[illegible]

[illegible]

Table 23

Distribution Based on Specified Service Volume,
Fiscal Capacity and Unit Cost Measures

		Percentage Shares	
Cities		64.8	
Calgary	27.0		
Edmonton	28.3		
Other	9.5		
Towns		16.6	
Villages		3.3	
Urban - Total			84.7
Counties		10.8	
Municipal Districts		4.5	
Rural - Total			15.3

Table 24

Correlation Between Municipal Grants and Specified Measures of Service Volume, Unit Cost and Fiscal Capacity

(Distribution Based on Specified Service Volume, Fiscal Capacity and Unit Cost Measures)

	Urban and Rural	Urban	Rural
Total Share			
(1) POP76	0.997536	0.998267	0.893032
Share Per Capita			
(2) EXPPC	0.500243	0.780361	0.130145
(3) EAPC	-0.340276	-0.307544	-0.646737
(4) AEAPC	-0.273215	-0.307544	-0.493393
(5) AITR	-0.017028	0.036303	-0.319187

weaker. Urban and rural per capita shares were strongly and negatively correlated with fiscal capacity measures EAPC and AEAPC. Average income (AITR, line (5)) was weakly correlated with per capita shares for urban and urban and rural combined. However, there was a significant negative correlation between average income and per capita share among rural municipalities.

Large grant shares to populated municipalities and large per capita shares to municipalities with high expenditures per capita and low fiscal capacity are generally characteristic of this method of grant distribution.

5.3.3 Distribution Based on the Alberta 1973 Municipal Assistance Grant Formula

This formula, as described in Chapter III, provides a level amount per capita for urban municipalities and a level amount per mile of road for rural municipalities. In addition, for each of four urban municipality population categories an average fiscal capacity is prescribed from which fiscal deficiencies are calculated. Similarly, for rural municipalities an average fiscal capacity is prescribed from which fiscal deficiencies are calculated. This fiscal deficiency component is similar to the *district power equalizing* type of formula described by Inman.[9]

Grant shares were computed under this formula (denoted MAG77SH) based on updated fiscal capacity averages as described in Chapter IV. Due to lack of empirical evidence that the budget constraining factor of 0.50963 was applied to urban fiscal deficiencies in 1973, no

such factor has been included in the following analysis.[10] Also, as noted in Chapter IV, it has been necessary to include all townships in rural municipalities unlike the stated method in 1973. However, on theoretical grounds this may be preferable in that the fiscal capacities of all rural municipalities become more homogeneous.

Allocation of funds under this formula leans even more heavily toward rural municipalities than under the existing distribution due to the exclusion of Edmonton and Calgary from the allocation of funds based on *relative economic need*. Application of this formula results in rural municipalities receiving 63.2% of funds (Table 25) compared to 35.3% of 1977 unconditional grants and 23.5% of all grants (Table 17). The complementary reduction of the urban share of funds is primarily experienced by cities which are reduced to 19.7% (Table 25) compared to 44.5% of 1977 unconditional grants and 77.5% of all grants (Table 17). Shares for individual municipalities are shown in Appendix D.

For all municipalities and among urban municipalities grant shares are strongly correlated with population (Table 26, line (1)). However, among rural municipalities, shares are strongly and negatively correlated with population with the coefficient being -0.401 (Table 26, line (1)). This relationship is not surprising since rural shares are based on land area which is unrelated to population. This negative correlation means that rural municipalities with large populations relative to land area receive a smaller share of funds. For all municipalities combined shares per capita were positively and strongly correlated with EXPPC, EAPC and AEAPC (Table 26, lines (2) - (4)). Among urban municipalities correlation between share per capita and

Table 25

Distribution Based on Alberta 1973 Municipal Assistance Grant

		Percentage Shares	
Cities		19.7	
Calgary	5.2		
Edmonton	5.1		
Other	9.4		
Towns		12.5	
Villages		4.6	
Urban - Total			36.8
Counties		40.8	
Municipal Districts		22.4	
Rural - Total			63.2

Table 26

Correlation Between Municipal Grants and Specified Measures of Service Volume, Unit Cost and Fiscal Capacity

(Distribution Based on Alberta 1973 Municipal Assistance Grant Formula)

	Urban and Rural	Urban	Rural
Total Share			
(1) POP76	0.563264	0.889450	-0.401269
Share Per Capita			
(2) EXPPC	0.410356	-0.291587	0.573455
(3) EAPC	0.370939	-0.913408	0.007152
(4) AEAPC	0.490964	-0.913408	0.026090
(5) AITR	-0.020321	-0.149068	0.036175

fiscal capacity (EAPC and AEAPC) was strongly negative (-0.913). However, the coefficient with EXPPC was negative (-0.292) indicating lower per capita shares for municipalities with higher expenditures per capita. In contrast, share per capita was positive and strongly correlated with EXPPC for rural municipalities (0.593) but correlation with fiscal capacity (EAPC and AEAPC) was weak (Table 26, lines (2) - (4)). Shares per capita were poorly correlated with AITR for urban and rural.

Under this distribution urban municipalities with larger populations receive larger grants. However, the reverse is true for rural municipalities. Urban municipalities with higher per capita expenditures receive lower per capita shares but the reverse is true for rural municipalities. Urban municipalities with low fiscal capacity generally receive higher per capita shares. Rural municipalities with low fiscal capacities generally receive the same per capita share as rural municipalities with high fiscal capacities.

5.3.4 Distribution Based on the Alberta 1973 Municipal Assistance Grant and Municipal Incentive Grant Formula

This distribution consists of the 1973 Municipal Assistance formula applied as described in section 5.3.3 plus application of the Municipal Incentive Grant formula (described in Chapter III) to updated (1976) supplementary school requisitions.

Allocation of funds under this formula between urban and rural is similar to the existing distribution of unconditional grants. This

formula results in 63.5% (Table 27) for urban compared to 64.7% (Table 17) under the existing unconditional grants distribution. Cities would receive 51.1% (Table 27) compared to 44.5% (Table 17) under the existing allocation of unconditional funds. This change can be attributed to the growth in cities' share of supplementary school requisitions since 1973. Shares for individual municipalities are shown in Appendix E.

Correlations under this alternative are similar to correlations under section 5.3.3. For all municipalities and among urban municipalities grant shares are strongly correlated with population (Table 28, line (1)). Rural municipalities' shares were weakly correlated with population with the coefficient being 0.056 (Table 28, line (1)). The land area component of the Municipal Assistance Grant formula (as in section 5.3.3) is seen as the source of this weak correlation with population. For urban municipalities negative correlation between share per capita and EXPPC (Table 28, line (2)) is indicative of lower per capita shares for municipalities with higher expenditures per capita in spite of the addition of the Municipal Incentive Grant. In contrast, share per capita was positive and strongly correlated with EXPPC for rural municipalities (0.628). Correlation with fiscal capacity (EAPC and AEAPC) was strong and negative for urban municipalities and weak for rural municipalities (Table 28, lines (3) and (4)) as in section 5.3.3. Strong positive correlation between shares per capita and fiscal capacity (EAPC and AEAPC) was present for all municipalities combined in contrast to the strong negative correlation for urban municipalities.

Table 27

Distribution Based on Alberta 1973 Municipal Assistance and Municipal Incentive Grant Formulae

		Percentage Shares	
Cities			
Calgary	21.4	51.1	
Edmonton	20.9		
Other	8.8		
Towns		9.8	
Villages		2.6	
Urban - TOTAL			63.5
Counties		24.2	
Municipal Districts		12.3	
Rural - TOTAL			36.5

Table 28

Correlation Between Municipal Grants and

Specified Measures of Service Volume, Unit Cost and Fiscal Capacity

(Distribution Based on 1973 Municipal Assistance Grant and Municipal Incentive Grant Formulae)

	Urban and Rural	Urban	Rural
Total Share			
(1) POP76	0.989470	0.999373	0.055938
Share Per Capita			
(2) EXPPC	0.465437	-0.279137	0.627542
(3) EAPC	0.485116	-0.813970	0.101489
(4) AEAPC	0.589241	-0.813970	0.111459
(5) AITR	-0.001608	-0.153380	0.067485

Under this distribution municipalities with larger populations receive larger grants. However, rural shares appear unrelated to population. Urban municipalities with higher per capita expenditures receive lower per capita shares but the reverse is true for rural municipalities. Urban municipalities with low fiscal capacities generally receive higher per capita shares. Rural municipalities with low fiscal capacity generally receive slightly lower per capita shares.

5.3.5 Distribution Based on Revenue Deficiency

An alternative currently in use in the Province of Saskatchewan is a formula which pays a grant varying directly with the excess of recognized expenditures over recognized revenues.[11] Funds allocated for this purpose originated from a pooling of previous unconditional and conditional grants supplemented by a share in the growth of provincial revenues. This pool of funds has grown to the point where it is sufficient to meet 100% of the revenue deficiencies determined under the formula.

Under this Saskatchewan formula, recognized expenditures for a rural municipality consist of *general administration costs and annual construction and maintenance costs of farm roads and bridges.*[12] Recognized revenue for rural municipalities is revenue produced by a rate of 40 mills levied on property assessment. This rate was assumed to be a rate which could be levied without substantial difficulty. The mill rate of 40 mills was found suitable for Alberta rural municipalities since their 1976 average mill rate was 40.7 mills.

Recognized expenditure for urban municipalities was assumed to

be a linear function of population within determined population groupings. Regression analysis was used to determine population groups of best fit on the basis of this expenditure function.[13] End points of these groupings were adjusted to smooth out transition from one group to the next. Recognized revenue for Alberta urban municipalities was also assumed to be a linear function of population. Recognized revenue is determined from application of a mill rate to property assessment. This rate was assumed to vary in direct proportion with population. The rate for an urban municipality is essentially an average of actual mill rates used by all municipalities of comparable population. Linear interpolations were made between these average mill rates in order to determine mill rates for intermediate population levels. Application of this method to 1976 Alberta expenditure data produced recognized expenditures and revenues as functions of population as shown in Table 29.[14]

Applied to Alberta data, this formula produced a substantial increase in the urban share of funds. Table 30 indicates 78.8% for urban municipalities compared to 64.7% for the existing allocation of unconditional grants (Table 17). The share of cities increases most significantly in this comparison from 44.5% to 65.5%. The complementary reduction in the rural share is indicated by a rural share of 21.2% (Table 30) compared to 35.3% of existing unconditional. Comparisons to all grants indicate less of an increase in the urban share with an increase from 76.5% (Table 17). Shares for individual municipalities are shown in Appendix E.

The analysis of correlation between shares (SASKSH) and equity

Table 29

Recognized 1976 Expenditures and Revenues for Unconditional Grants to Alberta Urban Municipalities
(Based on Saskatchewan Method)

Population	Recognized Expenditures
0-50	\$5,000
51-200	\$5,000 + 150.73 (Pop.-50)
201-500	\$27,610 + 188.55 (Pop.-200)
501-1500	\$84,175 + 230.91 (Pop.-500)
1501-10000	\$315,085 + 233.09 (Pop.-1500)
10001-100000	\$2,296,350 + 340.64 (Pop.-10000)
100001 +	\$32,953,950 + 349.17 (Pop.-100000)

Population	Recognized Revenues
0-50	.0230 x [Equalized Assessment]
51-100	[.0230 + .0002280 x (Pop.- 50)] x [Equalized Assessment]
101-250	[.0344 + .0001040 x (Pop.- 100)] x [Equalized Assessment]
251-750	[.0500 + .0000082 x (Pop.- 250)] x [Equalized Assessment]
751-2500	[.0541 + .0000039 x (Pop.- 750)] x [Equalized Assessment]
2501-100000	[.0610 + .00000007 x (Pop.-2500)] x [Equalized Assessment]
100001 +	.0683 x [Equalized Assessment]

Table 30

Distribution Based on Revenue Deficiency
(Saskatchewan Revenue Sharing Approach)

		Percentage Shares	
Cities		65.5	
Calgary	27.5		
Edmonton	26.8		
Other	11.2		
Towns		11.4	
Villages		1.9	
Urban - Total			78.8
Counties		15.0	
Municipal Districts		6.2	
Rural - Total			21.2

factor measures indicated a strong correlation between total shares and population for both urban and rural categories (Table 31). Correlation between share per capita and EXPPC was positive and significant for urban, rural and both combined. Share per capita correlation with EAPC and AEAPC for urban municipalities was significant and negative. For rural municipalities correlation with EAPC was near zero but correlation with AEAPC was somewhat significant at 0.136 indicating that per capita shares among rural municipalities would be greater for municipalities with a greater value of farmland per capita. There was no significant correlation with AITR.

Although correlations within urban and rural categories had expected negative signs for EAPC, for urban and rural combined the correlation coefficient had a positive sign. This sign implies that the formula may not equitably recognize fiscal capacity differences between an individual urban and an individual rural municipality.

Under this distribution shares for both urban and rural are larger for municipalities with larger populations. Shares per capita are larger for municipalities with higher expenditures per capita. Larger shares per capita for municipalities with low fiscal capacities is generally true only among urban municipalities.

5.3.6 Distribution Based on New Alberta Formula

A new *fiscal capacity component* was implemented in Alberta in 1979 and is used to allocate a portion of the 1979 increase of 7% in unconditional grants to Alberta's municipalities. Although this formula by reason of limited available funds for grants is restricted to municipal-

Table 31

Correlation Between Municipal Grants and Specified Measures of Service Volume, Unit Cost and Fiscal Capacity (Distribution Based on Revenue Deficiency)

	Urban and Rural	Urban	Rural
Total Share			
(1) POP76	0.998760	0.999695	0.796171
Share Per Capita			
(2) EXPPC	0.552004	0.119977	0.799284
(3) EAPC	0.451317	-0.302204	-0.016701
(4) AEAPC	0.583889	-0.302204	0.136496
(5) AITR	-0.017483	-0.070484	0.041007

ities other than Calgary and Edmonton and to a small amount of funds for 1979 it is of interest to determine its effects if applied generally in Alberta.

In the following analysis seven population and municipal classes were established in accordance with the formula applied to urban and rural municipalities and are shown in Table 32.[15] For each class an average fiscal capacity was determined. A municipality's grant share was determined as follows:

$$\text{Grant share to Municipality } i \ (NEWSH_i) = 0.5\ (NDEF_i/SNDEF) + 0.5\ (WTDPOP_i/SWTDPOP)$$

where $NDEF_i = (CAVG - EAPC_i)\ POP76_i$

where (CAVG - EAPC) positive, (otherwise zero)

CAVG = class average fiscal capacity (equalized assessment),

$EAPC_i$ = equalized assessment per capita for municipality i,

$POP76_i$ = 1976 population of municipality i,

SNDEF = sum of $NDEF_i$ for all municipalities,

$WTDPOP_i = POP76_i \times \dfrac{CAVG}{EAPC_i}$, and

SWTDPOP = sum of $WTDPOP_i$ for all municipalities.

The analysis indicates that the formula would allocate only 54.8% (Table 33) of funds to urban municipalities compared to urban municipalities present allocation of 64.7% of unconditional funds and 76.5% of all funds. The reallocation primarily would affect cities as

Table 32

1976 Fiscal Capacity Averages Under
New Alberta Formula

	Population Classes	Average 1976 Equalized Assessment Per Capita
A	Urban over 100,000 population	$3,077
B	Urban 10,000 to 99,999	2,356
C	Urban 5,000 to 9,999	2,273
D	Urban 1,000 to 4,999	1,762
E	Urban under 1,000	1,467
F	Rural over 7,000	3,470
G	Rural under 7,000	3,451

Table 33

Distribution Based on New Alberta Formula

		Percentage Shares	
Cities		37.9	
Calgary	14.0		
Edmonton	13.0		
Other	10.9		
Towns		13.4	
Villages		3.5	
Urban - Total			54.8
Counties		29.2	
Municipal Districts		16.0	
Rural - Total			35.2

this group's share would decline to 37.9% from 44.5% of existing unconditional grants or 77.5% of all existing grants (Table 17). Counties and municipal districts would benefit almost equally with each receiving an additional 5% over existing shares of unconditional grants. Shares for individual municipalities are shown in Appendix G.

Correlation analysis indicated positive and significant correlation between total shares and population (Table 34, line (1)). Negative correlation of per capita shares with EXPPC (Table 34, line (2)) for urban, rural and both combined indicates that the formula allocates larger per capita shares to municipalities with lower unit costs. However, the formula produced significant negative correlations between share per capita and EAPC for urban, rural and both combined (Table 34, line (3)) indicating that a larger per capita share is characteristic of lower fiscal capacity. This was also the case for each of urban and rural categories in respect of share per capita and AEAPC, although correlation is somewhat weaker for urban and rural combined (-0.05, Table 34, line (4)).

5.4 Comparison of Alternatives for Unconditional Grant Distribution

The foregoing sections described six alternatives to the existing distribution of unconditional grants and made general observations of each alternative. This section compares the six alternatives in terms of:

(a) general distribution,

(b) changes from existing grant distribution,

Table 34

Correlation Between Municipal Grants and Specified Measures of Service Volume, Unit Cost and Fiscal Capacity (Distribution Based on New Alberta Formula)

	Urban and Rural	Urban	Rural
Total Share			
(1) POP76	0.889750	0.985634	0.250628
Share Per Capita			
(2) EXPPC	-0.026579	-0.165362	-0.460667
(3) EAPC	-0.243211	-0.697785	-0.827945
(4) AEAPC	-0.051629	-0.697785	-0.694469
(5) AITR	-0.173743	-0.032800	-0.365496

(c) correlation with equity factor measures, and

(d) cost of transition.

5.4.1 Comparison of General Distribution

From Table 35 it is apparent that among the six alternatives MAG77SH apportions the smallest share (36.8%) of funds to urban municipalities and USSH apportions the largest share (87.9%) to urban municipalities. The major reason for MAG77SH providing the smallest share to urban municipalities is due to the arbitrary fiscal capacity standard selected for the population grouping of 400,000 + population under this formula. The effect of the selected standard is to exclude Edmonton and Calgary from funds based on *relative economic need*. Due to the large proportion these two cities represent of the total service volume (population) for municipalities, their effect on the overall provincial distribution is substantial. The reasons for USSH providing the largest share to urban municipalities is due to the use of a tax effort variable which tends to have higher values for urban municipalities. Cities would receive the smallest share (19.7%) under MAG77SH for the reason noted above. Cities would receive the largest share (65.5%) under SASKSH which is, in part, due to selection of population groupings and revenue functions for population groupings which is, to some extent, arbitrary. Towns would receive their smallest share under MIG77SH (9.8%) due to relatively low supplementary school requisitions and their largest share (23.1%) under USSH due to the influence of the tax effort variable as in the case noted above for urban municipalities. Results for rural municipalities are complementary and indicate that

Table 35

Comparison of Grant Share Changes Under Six Alternatives

	% Share of Existing Unconditional	% Share of Existing Total Grants*	USSH			INDEXSH			MAG77SH			MIG77SH			SASKSH			NEWSH		
			% Share	% U. Change	% T. Change	% Share	% U. Change	% T. Change	% Share	% U. Change	% T. Change	% Share	% U. Change	% T. Change	% Share	% U. Change	% T. Change	% Share	% U. Change	% T. Change
Cities - Total	44.5	60.8	59.7	+34.2	-1.8	64.8	+45.6	+6.6	19.7	-55.7	-67.5	51.1	+14.8	-16.0	65.5	+47.2	+7.7	37.9	-14.8	-37.7
Calgary	19.0	23.1	26.2	+37.9	+1.1	27.0	+42.1	+16.9	5.2	-72.6	-77.5	21.4	+12.6	- 7.4	27.5	+44.7	+19.0	14.0	-26.3	-39.4
Edmonton	17.6	27.8	22.0	+25.0	-20.9	28.3	+60.8	-20.9	5.1	-71.0	-81.7	20.9	+18.8	-24.8	26.8	+52.3	-3.6	13.0	-26.1	-53.2
Others	7.9	9.9	11.5	+45.6	+16.2	9.5	+20.3	-4.0	9.4	+19.0	-5.1	8.8	+11.4	-11.1	12.2	+54.4	+23.2	10.9	+38.0	+10.1
Towns	16.6	11.3	23.1	+39.1	+104.4	16.6	0.0	+46.9	12.5	-24.7	+10.6	9.8	-41.0	-13.3	11.4	-31.3	+0.9	13.4	-19.3	+18.6
Villages	3.6	4.4	5.1	+41.7	+15.9	3.3	-8.3	-25.0	4.6	+27.8	+4.5	2.6	-27.8	-40.9	1.9	-47.2	-56.8	3.5	-2.8	-20.5
Urban - Total	64.7	76.5	87.9	+35.9	+14.9	84.7	+30.9	+10.7	36.8	-43.1	-51.9	63.5	- 1.9	-17.0	78.8	+21.8	+21.8	54.8	-15.3	-28.4
Counties	24.0	17.4	8.5	-64.6	-51.1	10.8	-55.0	-37.9	40.8	+70.0	+134.5	24.2	+ 0.8	+39.1	15.0	-37.5	-13.8	29.2	+21.7	+67.8
Municipal Districts	11.3	6.1	3.6	-68.1	-41.0	4.5	-60.0	-26.2	22.4	+98.2	+267.2	12.3	+ 8.8	+101.6	6.2	-45.1	+1.6	16.0	+41.6	+162.3
Rural - Total	35.3	23.5	12.1	-65.7	-48.5	15.3	-56.7	-34.9	63.2	+79.0	+168.9	36.5	+ 3.4	+ 55.3	21.2	-39.9	-9.8	45.2	-0.3	+49.8

*"Total Grants" means 1977 unconditional grants, 1977 conditional operating grants and the average of 1973-77 conditional capital grants.

USSH apportions the smallest share (12.1%) to rural municipalities and MAG77SH (63.2%), the largest share to rural municipalities.

For urban and rural municipalities combined, grant shares were generally strongly correlated among existing unconditional (UGSH), existing total (ASH) and the alternatives (Table 36) with coefffficients in excess of 0.88. The most atypical share is found under MAG77SH which has lower coefficients ranging from 0.58 to 0.67. This is attributable to the fiscal capacity standard set to exclude Edmonton and Calgary as discussed previously. On the other hand, per capita shares among urban and rural municipalities combined are generally weakly correlated (Table 37). Both MAG77SH and MIG77SH are exceptions in that they are strongly correlated with each other and UGSH. This is expected since all contain significant elements of the 1973 Municipal Assistance Grant formula. Another exception is the strong correlation between SASKSH, UGSH, MAG77SH and MIG77SH. This is due to the similarity between the rural formula under SASKSH and that under the 1973 Municipal Assistance formula.

For urban municipalities, grant shares were all strongly correlated with all coefficients in excess of 0.89 (Table 38). Per capita shares were generally weakly correlated in this group with the exception of NEWSH (Table 39). Per capita shares under this alternative were strongly correlated with MAG77SH and MIG77SH. This is attributed to the common element of a fixed fiscal capacity standard for a category of municipality. Similar correlation with UGSH was not found, perhaps due to the differences in data between NEWSH and the 1973 base of UGSH.

For rural municipalities, grant shares (Table 40) were not as

Table 36

Correlation of Grant Shares Under Alternative Formula

Urban and Rural Combined

	UGSH	ASH	USSH	INDEXSH	MAG77SH	MIG77SH	SASKSH	NEWSH
UGSH	1.0000							
ASH	0.9802	1.0000						
USSH	0.9841	0.9747	1.0000					
INDEXSH	0.9852	0.9891	0.9919	1.0000				
MAG77SH	0.6438	0.5897	0.5614	0.5625	1.0000			
MIG77SH	0.9932	0.9851	0.9835	0.9876	0.6724	1.0000		
SASKSH	0.9900	0.9905	0.9938	0.9971	0.5858	0.9926	1.0000	
NEWSH	0.9002	0.8838	0.8960	0.8864	0.6693	0.9011	0.8937	1.0000

Table 37

Correlation of Grant Shares Per Capita Under Alternative Formulae

Urban and Rural Combined

	UGSH	ASH	USSH	INDEXSH	MAG77SH	MIG77SH	SASKSH	NEWSH
UGSH	1.0000							
ASH	0.0329	1.0000						
USSH	-0.1975	-0.0275	1.0000					
INDEXSH	0.0458	-0.0212	0.5366	1.0000				
MAG77SH	0.8198	0.0220	-0.1590	0.0575	1.0000			
MIG77SH	0.8267	0.0175	-0.2456	0.0039	0.9903	1.0000		
SASKSH	0.6766	-0.0203	-0.1491	0.1046	0.7692	0.7869	1.0000	
NEWSH	0.2690	-0.0194	0.2867	0.2576	0.3704	0.3141	0.3925	1.0000

[illegible]

Table 38

Correlation of Grant Shares Under Alternative Formulae

Urban Municipalities

	UGSH	ASH	USSH	INDEXSH	MAG77SH	MIG77SH	SASKSH	NEWSH
UGSH	1.0000							
ASH	0.9854	1.0000						
USSH	0.9961	0.9771	1.0000					
INDEXSH	0.9945	0.9902	0.9924	1.0000				
MAG77SH	0.8941	0.8860	0.8962	0.8833	1.0000			
MIG77SH	0.9963	0.9906	0.9956	0.9971	0.9018	1.0000		
SASKSH	0.9966	0.9910	0.9956	0.9975	0.8977	0.9998	1.0000	
NEWSH	0.9858	0.9750	0.9881	0.9814	0.9473	0.9896	0.9882	1.0000

Table 39

Correlation of Grant Shares Per Capita Under Alternative Formulae

Urban Municipalities

	UGSH	ASH	USSH	INDEXSH	MAG77SH	MIG77SH	SASKSH	NEWSH
UGSH	1.0000							
ASH	0.0315	1.0000						
USSH	0.2677	-0.0322	1.0000					
INDEXSH	0.1823	-0.0263	0.5132	1.0000				
MAG77SH	0.3795	0.0118	0.6228	0.2950	1.0000			
MIG77SH	0.3536	-0.0027	0.5720	0.2598	0.9635	1.0000		
SASKSH	0.0433	-0.0706	0.4395	0.2928	0.3618	0.3891	1.0000	
NEWSH	0.3267	-0.0414	0.6442	0.3372	0.8048	0.7975	0.5443	1.0000

Table 40

Correlation of Grant Shares Under Alternative Formulae

Rural Municipalities

	UGSH	ASH	USSH	INDEXSH	MAG77SH	MIG77SH	SASKSH	NEWSH
UGSH	1.0000							
ASH	0.7583	1.0000						
USSH	0.4302	0.5393	1.0000					
INDEXSH	0.6216	0.7031	0.8553	1.0000				
MAG77SH	0.2067	0.1030	-0.1349	-0.1974	1.0000			
MIG77SH	0.5594	0.4140	0.1148	0.1723	0.8745	1.0000		
SASKSH	0.6779	0.7141	0.5946	0.8866	-0.1547	0.2233	1.0000	
NEWSH	0.0558	0.2888	0.7306	0.5658	0.0180	0.0012	0.3095	1.0000

strongly correlated as for urban municipalities due to some formulae using a population variable and others not using a population variable. By reason of the inclusion of a population variable, USSH, INDEXSH and NEWSH are strongly correlated. Per capita shares were generally more strongly correlated among rural municipalities (Table 41) than among urban municipalities. This suggests a greater similarity in functional forms among rural municipalities than among urban municipalities.

5.4.2 Changes from Existing Grant Distribution

Each of USSH, INDEXSH and SASKSH tend to shift funds from rural to urban rather significantly whereas the reverse is true for MAG77SH, MIG77SH and NEWSH (Table 35). In order to determine which alternative produced the most significant overall change in shares average percentage changes were determined for absolute values of percentage changes in shares in respect of:

(a) changes from 1977 unconditional grant share (Table 42), and

(b) changes from total grant share (Table 43).

In order for public policy makers to minimize adverse political reaction to a change in grants structure it is important to indicate which alternative would initially produce the least change in grant shares. The lowest average percentage change among the six alternatives indicates the alternative which, if implemented, would initially produce the least change from existing grant shares.

For urban, rural, or both combined, MIG77SH produced the smallest change based on the existing distribution of unconditional grants (Table 42). In relation to existing shares of total grants SASKSH produced

Table 41

Correlation of Grant Shares Per Capita Under Alternative Formulae

Rural Municipalities

	UGSH	ASH	USSH	INDEXSH	MAG77SH	MIG77SH	SASKSH	NEWSH
UGSH	1.0000							
ASH	0.8576	1.0000						
USSH	-0.0807	0.1175	1.0000					
INDEXSH	0.4367	0.5485	0.6564	1.0000				
MAG77SH	0.8534	0.8035	0.0533	0.5078	1.0000			
MIG77SH	0.8595	0.7981	-0.0249	0.4396	0.9943	1.0000		
SASKSH	0.7176	0.6615	0.0670	0.6574	0.7212	0.7178	1.0000	
NEWSH	-0.0600	0.1302	0.8773	0.7106	0.0730	-0.0119	0.0468	1.0000

Table 42

Average Percentage Changes from Existing Shares of Unconditional Grants Under Alternative Formulae

	Urban	Rural	Total
USSH	62.2	72.0	63.8
INDEXSH	35.0	58.2	38.8
MAG77SH	48.5	130.4	61.8
MIG77SH	31.9	35.1	32.4
SASKSH	39.7	41.4	40.0
NEWSH	56.4	141.2	70.3

Table 43

Average Percentage Changes from Existing Shares of Total Grants Under Alternative Formulae

	Urban	Rural	Urban and Rural
USSH	151.7	61.6	137.0
INDEXSH	73.1	41.7	68.0
MAG77SH	124.9	238.7	143.4
MIG77SH	51.9	83.0	57.0
SASKSH	40.0	24.4	37.5
NEWSH	99.0	161.2	109.2

the smallest variation for urban, rural or both combined (Table 43).

5.4.3 Correlation with Equity Factor Measures

In correlation with the three equity factor measures, only INDEXSH produced significant coefficients with the expected sign for urban and rural combined (Table 24). The USSH formula (per capita share) produced a negative coefficient of correlation with EXPPC (Table 22). The MAG77SH formula produced a positive correlation with EAPC (Table 26) as did SASKSH (Table 31). NEWSH produced negative correlation (near zero) in respect of EXPPC (Table 34). Similar results were obtained within urban and rural cagetories. Reasons for the failure of some alternatives to meet the expected correlation with the measures of unit cost (EXPPC) and fiscal capacity (EAPC) are:

(a) offsetting influence of different variables in a formula,

(b) variations in fiscal capacity standards among categories of municipalities,

(c) absence of a factor to accurately measure unit cost, and

(d) different formulae for each of urban and rural categories.

Each of the six alternative formulae contains several variables with weightings (either explicit or implicit) applied to each variable in the determination of a grant share. Whereas one variable may be related directly to share per capita in the formula, another variable may be related inversely. In respect of correlation between grant per capita and a selected measure of service volume, unit cost or fiscal capacity, the influence of one variable in the formula may be offset by the influence of another variable. This offset is largely a function of

the weight attached to each variable in the formula but where it occurs in sufficient magnitude and for a sufficient number of observations, a correlation coefficient may be near zero or have an unexpected sign. It would, therefore, be an error to conclude that a formula is not equalizing where the wrong sign appears on the correlation coefficient for a single equity factor measure. This sign may merely reflect the weight attached to that variable in relation to other variables.

In order to determine the relative performance of alternative grant formulae in relation to the equity factors, it is necessary to base comparisons on multiple regression analysis such that one can determine performance where one variable (e.g. EXPPC) changes in value while the other variable (e.g. EAPC) is held constant. In order to complete this analysis, it has been necessary to select a standard functional form of the relationship between share per capita, unit cost (EXPPC) and fiscal capacity (EAPC, AEAPC or AITR). It is assumed that share per capita should vary directly with unit cost, inversely with fiscal capacity and in exponential form. This may be expressed as:

$$\text{SHPC} = c \times \text{UCM}^{a} \times \left(\frac{1}{\text{FCM}}\right)^{b}$$

where SHPC = Grant share per capita,

UCM = Unit cost,

FCM = Fiscal capacity,

a = Weighting of unit cost variable,

b = Weighting of fiscal capacity variable, and

c = Constant term.

For puproses of ordinary least square linear regression analysis this is converted to the log-linear form:

$$LOG(SHPC) = C + a \ LOG(UCM) - b \ LOG(FCM)$$

where C = Log (c).

Substituting EXPPC for UCM and each of EAPC, AEAPC and AITR for FCM log-linear regressions were completed for existing per capita shares (unconditional and total) and the six alternatives.

Detailed results of these regressions are contained in Appendices I to K but are summarized in Tables 44 to 46. As indicated in Table 44 for urban and rural municipalities combined, per capita shares based on INDEXSH were most satisfactorily explained by EXPPC and the fiscal capacity measures having the highest R^2 value regardless of fiscal capacity measure used in the regression. However, this is expected since the functional form of INDEXSH indicated in section 5.3.2 and expressed on a per capita basis is identical to the functional form utilized in the regression. Other per capita grant distributions are less satisfactorily explained under these regressions since their functional forms are less directly related to unit cost (EXPPC) and fiscal capacity (EAPC, AEAPC or AITR) variations than INDEXSH. For example, USSH uses a tax effort variable (NMRF) and excludes a variable directly reflecting unit cost. Existing grants under UGSH and ASH have positive coefficients of the fiscal capacity terms based on assessment indicating that shares per capita are currently larger for municipalities with higher assessment per capita when all other factors are held constant.

Table 45 provides a similar analysis of per capita share variations among urban municipalities. Once again INDEXSH is most satisfactorily explained by the stated criteria. The Alberta formulae of MAG77SH,

Table 44

Comparison of Explanatory Power of Measures of Equity Factors*

Under Alternative Formulae

Urban and Rural Combined

Dependent Variable (LOG of Per Capita Share)	Fiscal Capacity Measure (Independent Variable): LOG(EAPC)		LOG(AEAPC)		LOG(AITR)	
	R^2	Rank	R^2	Rank	R^2	Rank
UGSH	0.0904^{+x}	6	0.1340^{+}	5	0.0870^{x}	5
ASH	0.1069^{+x}	5	0.1254^{+}	6	0.1022^{x}	3
USSH	0.3990	2	0.3999	2	0.0592^{-x}	7
INDEXSH	1.0000	1	0.9033	1	0.2726	1
MAG77SH	0.0555	8	0.0068^{xy}	8	0.0463^{y}	8
MIG77SH	0.0851^{+x}	7	0.1641^{+y}	4	0.0972	4
SASKSH	0.2036^{x}	4	0.2344^{+}	3	0.2213	2
NEWSH	0.2807	3	0.0844^{y}	7	0.0683^{-}	6

+ denotes positive sign on coefficient of logarithm of fiscal capacity measure.

- denotes negative sign on coefficient of LOG(EXPPC).

x denotes insignificant coefficient of the logarithm of fiscal capacity measure at 5% level.

y denotes insignificant coefficient of LOG(EXPPC).

* All regressions include the term LOG(EXPPC).

Table 45

Comparison of Explanatory Power of Measures of Equity Factors*

Under Alternative Formulae

Urban Municipalities

Dependent Variable (LOG of Per Capita Share)	Fiscal Capacity Measure (Independent Variable): LOG(EAPC) R^2	LOG(EAPC) Rank	LOG(AITR) R^2	LOG(AITR) Rank
UGSH	0.2003^{y}	6	0.0116^{-+xy}	7
ASH	0.0203^{x}	8	0.0134^{+xy}	6
USSH	0.1361	7	0.0113^{xy}	8
INDEXSH	1.0000	1	0.5948	1
MAG77SH	0.7941^{-y}	2	0.1306^{-}	3
MIG77SH	0.7162^{-y}	3	0.1370^{-}	2
SASKSH	0.2189	5	0.0377	5
NEWSH	0.6510	4	0.0486^{-x}	4

+ denotes positive sign on coefficient in respect of fiscal capacity measure.

- denotes negative sign on coefficient in respect of EXPPC.

x denotes insignificant coefficient of the logarithm of fiscal capacity measure at 5% level.

y denotes insignificant coefficient of LOG(EXPPC) at 5% level.

* All regressions include the term LOG(EXPPC)

Table 46

Comparison of Explanatory Power of Measures of Equity Factors*

Under Alternative Formulae

Rural Municipalities

Dependent Variable (LOG of Per Capita Share)	Fiscal Capacity Measure (Independent Variable): LOG(EAPC) R^2	Rank	LOG(AEAPC) R^2	Rank	LOG(AITR) R^2	Rank
UGSH	0.5831	6	0.5883	3	0.5015^{x}	2
ASH	0.4974	8	0.4778	6	0.3839	7
USSH	0.6317^{y}	4	0.4303^{-y}	8	0.4586^{-}	4
INDEXSH	1.0000	1	0.6219	2	0.2052^{y}	8
MAG77SH	0.5751	7	0.4763	7	0.4366	5
MIG77SH	0.5861	5	0.5492	5	0.4839	3
SASKSH	0.9290	2	0.7539	1	0.6406	1
NEWSH	0.9092^{y}	3	0.5739^{-y}	4	0.4145^{-}	6

+ denotes positive sign on coefficient of logarthim fiscal capacity measure.

- denotes negative sign on coefficient of LOG(EXPPC).

x denotes insignificant coefficient of the logarithm of fiscal capacity measure at 5% level.

y denotes insignificant coefficient of LOG(EXPPC) at 5% level.

* All regressions include the term LOG(EXPPC).

[illegible]

MIG77SH and NEWSH also perform well with R^2 values in excess of 0.65 where assessment is used as fiscal capacity. However, both MAG77SH and MIG77SH have negative and insignificant coefficients on the EXPPC term indicating a weak relationship between per capita shares and EXPPC. Existing per capita distributions (both UGSH and ASH) are poorly related to the stated criteria. UGSH per capita with an insignificant coefficient of the EXPPC term is weakly related to EXPPC. ASH per capita with an insignificant coefficient of the fiscal capacity term is weakly related to fiscal capacity.

Table 46 provides the analysis of per capita share variation among rural municipalities also indicating that INDEXSH is most satisfactorily explained by the stated criteria (where EAPC is used as the measure of fiscal capacity). However, SASKSH is most satisfactorily explained where AEAPC or AITR is used as the measure of fiscal capacity and is the second most satisfactorily explained where EAPC is used as the measure of fiscal capacity. Both UGSH and ASH per capita shares are substantially explained by the stated criteria with proper signs on both coefficients unlike the cases of urban municipalities and urban and rural combined.

In general, other alternatives do not perform well in relation to the standard set by the regression equation and INDEXSH since they do not treat all munipalities equally. Each of MAG77SH, MIG77SH, SASKSH and NEWSH vary fiscal capacity standards among categories of municipalities. MAG77SH and MIG77SH have a different standard for each of four urban population categories and for rural municipalities. NEWSH uses a different standard for each of seven categories (Table 32). Each of

USSH, MAG77SH, MIG77SH and NEWSH fail to explicitly recognize cost differentials. For MAG77SH and MIG77SH this gives rise to the negative but insignificant coefficient of the EXPPC term for urban municipalities indicated in Table 45. For USSH this lack of recognition gives rise to an insignificant coefficient of the EXPPC term for rural municipalities indicated in Table 46. Similar insignificant or negative coefficients of the EXPPC term are indicated for NEWSH in the cases of rural municipalities and urban and rural municipalities combined.

Each of UGSH, ASH, MAG77SH, MIG77SH, SASKSH and NEWSH reflect specified differences in grant eligibility between urban and rural categories. For this reason, a distribution may perform substantially better in terms of the equity criteria among either the urban or rural groups than among both combined. A comparison of R^2 (where the fiscal capacity measure is EAPC) in Tables 44 to 46 indicates a higher value in both urban and rural groupings than in urban and rural combined for UGSH, MAG77SH, MIG77SH, SASKSH and NEWSH. Subject to the stated assumptions underlying the regression, it may be concluded that these distributions provide an inequitable allocation of funds between urban and rural groupings. The same comparison for ASH is not as conclusive since the low R^2 for urban and rural combined may be solely due to the very low R^2 for the urban group. In comparison to the distribution of either USSH or INDEXSH (formulae which are neutral between urban and rural) the effect of this bias toward rural areas in the allocation of funds is substantial. As indicated in Table 35, rural shares under the neutral formulae (USSH and INDEXSH) range from 12.1% to 15.3% compared

to 21.2% to 63.2% under the biased formulae.

5.4.4 Cost of Transition

The alternatives examined may be divided into two basic types. One type which includes USSH, INDEXSH and NEWSH provides for the distribution of shares of a given amount of funds to all municipalities with a municipality's share varying according to the factors recognized in the formula. The second type which includes SASKSH, MAG77SH, and, in part, MIG77SH is the *power equalizing* type and sets fiscal capacity and tax effort standards with grants being directed toward municipalities having fiscal capacities below the fiscal capacity standard.[16] In the case of SASKSH, fiscal capacity and tax effort standards were measured by the relationship between recognized revenue and recognized expenditure for specific types of municipalities (rural and urban) and specific population categories (urban). In the case of MAG77SH and MIG77SH, a fiscal capacity standard was set for each urban population category and for the rural category with the equalized mill rate being used as the tax effort variable. MIG77SH contains the additional feature of the grant level varying directly with supplementary school requisition level. Elsewhere in this paper, SASKSH, MAG77SH and MIG77SH have been discussed and compared with other alternatives in terms of relative shares of funds allocated. However, based on the set fiscal capacity and tax effort standards, the distribution of fiscal capacities and tax effort among municipalities and the level of supplementary school requisitions, it is possible to determine the amount of funds required to fully equalize up to these standards. Funds required for this

purpose are shown in Table 47 which indicates that full equalization under SASKSH would require $231.2 million whereas MAG77SH would require $29.0 million and MIG77SH would require $70.3 million. The higher cost for SASKSH may be attributed to its use of higher fiscal capacity standards than under MAG77SH and MIG77SH. The effect on cost of this use of higher fiscal capacity standards for SASKSH is primarily due to this formula's favorable treatment of the cities of Edmonton and Calgary. Under MAG77SH and MIG77SH these cities do not receive an amount of funds on the basis of relative fiscal capacity as described by *relative economic need*. However, a sizeable amount of funds is allocated to these two cities under SASKSH on the basis of relative fiscal capacity and population as described by *revenue deficiency*. The selection of fiscal capacity standards have a considerable influence on cost where the inclusion or exclusion of these two cities is affected.

For the remainder of this paper we will revert to discussing alternatives (including SASKSH and MAG77SH) in terms of shares of funds. In this way comparisons can be made independent of the amount of funds required for a specified level of equalization.

Any change to a new grant formula is normally made with a provision that no recipient receive less than under the existing formula. The cost of this provision has been measured in relative terms for each of the six alternative formulae as shown in Table 48.[17] This table shows the percentage increase in total funds necessary in order to maintain previous funding levels for those municipalities which would receive a reduced share under the new formula. This information is presented for use of the alternative to redistribute either

Table 47

Cost of Equalization Grants Under Full "Power Equalization" Alternatives, 1977

	Urban	Rural	Total
Municipal Assistance Formula (MAG77SH)	$10,678,976	$18,362,144	$29,041,120
Municipal Assistance and Municipal Incentive Formulae (MIG77SH)	$ 44,602,992	$25,671,888	$70,274,880
Revenue Deficiency Formula (Saskatchewan formula, SASKSH)	$182,378,180	$48,845,952	$231,224,132

Table 48

Increases in Funds for Unconditional Grants Required to Prevent a Reduced Amount of Funds to Any One Municipality

Formula	Application of Formula to: Redistribution of Existing Unconditional Grants	Redistribution of All Existing Grants
	%	%
USSH	26.1	23.3
INDEXSH	24.8	15.1
MAG77SH	43.0	55.4
MIG77SH	14.0	18.8
SASKSH	21.7	11.2
NEWSH	35.1	41.1

existing unconditional grants or all existing grants. A change to MAG77SH would be most costly if applied to unconditional or all grants. MIG77SH would be least costly to redistribute unconditional grants and SASKSH would be least costly to redistribute all grants.

5.5 Overview

The existing distribution of unconditional and total grants was found to be largely related to population except among rural municipalities. However, per capita shares among urban and rural municipalities combined and among urban municipalities were found to be larger for municipalities with higher fiscal capacities. Based on the assumption that per capita shares should vary directly with unit cost (EXPPC) and fiscal capacity (EAPC, AEAPC or AITR) it was demonstrated that several alternatives perform better in this regard than does the existing distribution of either unconditional or total grants. Direct representation of this relationship in the grant formula (i.e. INDEXSH) was demonstrated as performing the best among all alternatives where EAPC is used as the measure of fiscal capacity. Although INDEXSH provides the most equitable distribution (given the assumed functional form and the stated equity factors) other alternatives produced less change from existing grant shares and lower cost of transition, two other important public policy considerations.

Footnotes

[1]In an effort to restrict the analysis to municipalities with relatively homogeneous powers this chapter studies cities, towns, villages, counties and municipal districts. Other types of municipalities are excluded due to their reduced powers and the lack of data required to make reasonable adjustments for this fact.

[2]Russell L. Mathews, "Fiscal Equalization Models", *Fiscal Equalization in a Federal System,* (Canberra: Australian National University, 1974), pp. 21-32.

[3]Julian LeGrand, "Fiscal Equity and Central Government Grants to Local Authorities" *Economica 85* (September, 1975), pp. 542-44.

[4]This implication is drawn from the 1973 Municipal Assistance Grant formula for rural municipalities.

[5]Government of Alberta, Alberta Bureau of Statistics, Unpublished data indicating 1976 income and number of tax returns sampled, by location code.

[6]Robert D. Reischauer, "General Revenue Sharing - The Program's Incentives", *Financing the New Federalism,* (Baltimore: John Hopkins University Press, 1975), pp. 42-50.

[7]Equalized mill rate (NMRF) is defined as being total municipal taxes on real property (including government grants in lieu of taxes) and business taxes expressed as a mill rate on equalized assessment.

[8]Richard A. Musgrave and Peggy B. Musgrave, *Public Finance in Theory and Practice,* (New York: McGraw-Hill Book Company, 1976), p. 657.

[9]Robert P. Inman, "Optimal Fiscal Reform of Metropolitan Schools: Some Simulation Results", *American Economic Review,* Vol. 65, No. 1 (March, 1978), pp.113-14.

[10]It was observed that the sum of "deficiency dollars" computed under the 1973 formula was equivalent to the sum of money allocated for that purpose in the case of urban municipalities. According to the stated method the relationship should have been in a ratio of 0.50963.

[11]O. Yul Kwon, "Revenue Sharing As An Improvement In Provincial Municipal Relations In Canada: An Evaluation of Saskatchewan Revenue Sharing", *Working Paper Series 78-03*, (Regina: Faculty of Administration, University of Regina, 1978), pp. 6-10. The flat amounts per municipality and per capita in the Saskatchewan plan have been excluded from the following analysis in order to provide for equalization of revenues and expenditures according to the specified functions.

[12]*Ibid.*, p. 6.

[13]*Ibid.*, p. 10.

[14]Expenditures used in the analysis were expenditures as defined in determining EXPPC in section 5.1. Mill rates used were NMRF as defined in section 5.3.1.

[15]Government of Alberta, Department of Municipal Affairs, "The Municipal Assistance Grant", Pamphlet issued June, 1979.

[16]NEWSH may be viewed as being, in part, a *power equalizing type* but it lacks the tax effort standard characteristic of this type.

[17]Costs shown in Table 39 are the costs to prevent a reduction in share of funds in the year of implementation of the alternative. If one assumes that the total funds allocated will increase over time, then these "extra" costs are only temporary since the formula will eventually produce at least as large an amount of funds as under the existing distribution.

Chapter VI

SUMMARY AND CONCLUSIONS

The existing Alberta municipal grants structure has been analyzed in terms of the two economic purposes of grants. It has been found that there is an underlying need for reform of the present grants distribution. Conditional grants are being applied where external costs are not apparent. Grants purportedly paid as equalizing grants have been found to be weakly related to measures of service volume, fiscal capacity and unit cost due to the use of criteria not directly related to these equity criteria. Furthermore, as indicated in the analysis of the 1973 application of the Municipal Assistance Grant, a substantial sum has been allocated on the basis of unknown factors.

Unconditional grant alternatives explored indicated that some methods in use in other jurisdictions as well as the new Alberta formula also do not perform well in relation to the equity criteria for either urban, rural or both combined. The most equitable results obtained (as measured by multiple correlation of per capita shares with equity factors) occured where all municipalities were recognized as equals and the formula explicitly recognized the three factors. However, conclusions based on this formula implicitly have the caveat of the functional form (exponential) and the relative weights attached to the equity factors in the formula.

One such conclusion was that the urban/rural apportionment of the existing unconditional grants is heavily in favor of rural municipalities

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

as indicated by the comparison between the existing apportionment and a formula (e.g., INDEXSH) which is neutral among municipal categories [Table 35]. However, when all grants are considered, this apportionment is not as heavily in favor of rural municipalities.

General application of a new formula should be preceded by a refinement of unit cost and fiscal capacity measures. Two possible refinements of fiscal capacity measures have been explored, namely AEAPC and AITR, and the performance of existing grants and alternatives in relation to these measures has been analyzed. It was indicated in Chapter IV that EAPC was distorting as a fiscal capacity measure between urban and rural municipalities due to farmland being assessed at a fixed rate unlike other property. There is no evidence in correlation of grant shares per capita with adjusted EAPC (i.e., AEAPC) to suggest that any formula contained an implicit adjustment for this fact. No formula produced a significantly stronger correlation with AEAPC than with EAPC. Correlation of grant shares per capita showed weak correlation with AITR. Previously described limitations of the income date (AITR) in the aggregation of areas has possibly distorted values of correlation coefficients. More reliable income data is required before assessment per capita can be properly analyzed to determine whether it is a representative variable of relative incomes.

In summary, the present Alberta grants structure is creating inefficiencies through the inappropriate use of conditional grants and large inequities through the unconditional grant formula structure. It is recommended that reform of the present grants structure should proceed on the basis of:

(a) restricting conditional grants to use in amounts which are in reasonable proportion to external costs and only where joint action of municipalities is not feasible,

(b) discontinuing conditional grants which are inappropriate as Pigouvian subsidies and, perhaps, use these funds for unconditional grants,

(c) treating all municipalities as equals without regard to local choice between public and private provision of services,

(d) refining measures of unit cost and fiscal capacity, and

(e) implementing an unconditional grants formula which directly recognizes the equity factors of relative service volume, relative unit cost and relative fiscal capacity.

These factors are presented as the basis for providing an equitable and efficient grants structure.

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Appendix A

Amounts of Unconditional and Conditional Grants to Individual Alberta Municipalities in 1977

Legend:

ID NO.	=	Identification number: see Appendix H for conversion from municipality name to ID No.
IDT	=	Municipality type: 1 = City; 2 = Town; 3 = Village; 5 = County; 6 = Municipal District
TUG77	=	1977 Unconditional Grants (Total).
COG77	=	1977 Conditional Operating Grants.
ACG	=	Average of 1973-77 Conditional Capital Grants.
TAG	=	Sum of TUG77, COG77 and ACG.
ASH	=	Percentage share of TAG for all municipalities.

ID NO.		IDT	TUG77	COG77	ACG	TAG	ASH
46	.	1.00000	0.106590E+08	0.184760E+08	0.154036E+08	0.445386E+08	23.0685
48	.	1.00000	283567.	54257.0	332737.	670561.	0.347312
92	.	1.00000	87162.0	102727.	128991.	318880.	0.165162
98	.	1.00000	0.984030E+07	0.217910E+08	0.220948E+08	0.537261E+06	27.8270
132	.	1.00000	490469.	610718.	697357.	0.179854E+07	0.931543
203	.	1.00000	0.100371E+07	0.134441E+07	0.173163E+07	0.407975E+07	2.11307
217	.	1.00000	814398.	0.515193E+07	0.140451E+07	0.737084E+07	3.81767
262	.	1.00000	905104.	789019.	561465.	0.225559E+07	1.16826
347	.	1.00000	199261.	243906.	379824.	822991.	0.426262
3	.	2.00000	64195.0	34627.0	42236.6	141061.	0.730613E-01
11	.	2.00000	67540.0	42495.0	1414.00	111449.	0.577242E-01
14	.	2.00000	58773.0	85177.0	52873.8	196824.	0.101943
16	.	2.00000	15134.0	10666.0	7108.00	32908.0	0.170445E-01
17	.	2.00000	34466.0	12230.0	39835.4	85531.4	0.443004E-01
21	.	2.00000	45936.0	18639.0	25369.8	89944.8	0.465862E-01
30	.	2.00000	56044.0	6815.00	9056.00	71915.0	0.372478E-01
33	.	2.00000	131004.	34278.0	14044.0	179326.	0.928806E-01
35	.	2.00000	106887.	100366.	36571.8	243825.	0.126287
39	.	2.00000	38680.0	16897.0	0.0	55577.0	0.287857E-01
43	.	2.00000	178706.	145878.	288849.	613433.	0.317723
47	.	2.00000	49116.0	46362.0	7400.80	102879.	0.532853E-01
50	.	2.00000	53292.0	41599.0	62603.0	157494.	0.815729E-01
52	.	2.00000	112340.	33437.0	46929.4	192706.	0.998108E-01
56	.	2.00000	46855.0	26539.0	18235.4	91629.4	0.474588E-01
58	.	2.00000	37651.0	88241.0	43425.6	169318.	0.876968E-01
65	.	2.00000	208857.	114438.	251075.	574370.	0.297491
69	.	2.00000	144917.	2145.00	0.0	147062.	0.761697E-01
70	.	2.00000	65403.0	5521.00	0.0	70924.0	0.367346E-01
71	.	2.00000	66360.0	22723.0	27877.0	116960.	0.605786E-01
72	.	2.00000	71998.0	27737.0	0.0	99735.0	0.516570E-01
75	.	2.00000	34970.0	10100.0	12069.0	57139.0	0.295947E-01
82	.	2.00000	25810.0	5531.00	4513.20	35854.2	0.185704E-01
86	.	2.00000	92894.0	148263.	52944.6	294102.	0.152328
88	.	2.00000	74841.0	37818.0	96754.4	209413.	0.108464
91	.	2.00000	212534.	89460.0	91049.0	393043.	0.203574
95	.	2.00000	22612.0	27731.0	14272.4	64615.4	0.334671E-01
100	.	2.00000	149008.	87131.0	30891.2	267030.	0.138306
101	.	2.00000	31260.0	16949.0	10000.0	58209.0	0.301489E-01
106	.	2.00000	63748.0	27153.0	30502.6	121404.	0.628801E-01
108	.	2.00000	39258.0	38602.0	84101.4	161961.	0.838867E-01
115	.	2.00000	116340.	54759.0	14860.0	185959.	0.963161E-01
116	.	2.00000	0.135625E+07	424762.	486191.	0.226721E+07	1.17428
117	.	2.00000	228587.	92628.0	110602.	431817.	0.223656
119	.	2.00000	46272.0	45643.0	99097.8	191013.	0.989337E-01
126	.	2.00000	19880.0	5375.00	5340.00	30595.0	0.158465E-01
130	.	2.00000	136227.	36588.0	49983.4	222798.	0.115397
131	.	2.00000	144488.	129315.	215555.	489358.	0.253459

ID NO.		IDT	IOG77	COG77	ACG	TAG	ASH
135	.	2.00000	19247.0	2909.00	5608.00	27764.0	0.143802E-01
137	.	2.00000	75727.0	30972.0	15484.0	122183.	0.632638E-01
141	.	2.00000	93636.0	90213.0	20930.0	204779.	0.106064
143	.	2.00000	26918.0	27185.0	33040.0	87143.0	0.451351E-01
146	.	2.00000	52148.0	56574.0	208199.	316921.	0.164147
147	.	2.00000	107213.	137613.	81194.8	326021.	0.168860
148	.	2.00000	115219.	17724.0	20923.0	153866.	0.796938E-01
151	.	2.00000	163390.	69533.0	139881.	372804.	0.193091
180	.	2.00000	86991.0	139620.	36039.2	262650.	0.136038
184	.	2.00000	6637.00	39636.0	0.0	46273.0	0.239668E-01
188	.	2.00000	25323.0	12258.0	7926.80	45507.8	0.235704E-01
192	.	2.00000	60214.0	209302.	7565.40	277081.	0.143512
194	.	2.00000	110653.	108417.	23770.6	242841.	0.125777
197	.	2.00000	29280.0	70077.0	12198.0	111555.	0.577791E-01
200	.	2.00000	272497.	160472.	102391.	535360.	0.277286
211	.	2.00000	76868.0	9025.00	0.0	85893.0	0.444877E-01
212	.	2.00000	50903.0	131410.	25192.6	207506.	0.107476
215	.	2.00000	42922.0	0.0	107279.	150201.	0.777956E-01
216	.	2.00000	65798.0	31603.0	8360.00	105761.	0.547782E-01
218	.	2.00000	23144.0	33555.0	83923.8	140623.	0.728345E-01
224	.	2.00000	96011.0	73926.0	21575.6	191513.	0.991926E-01
227	.	2.00000	22577.0	17389.0	0.0	39966.0	0.207001E-01
232	.	2.00000	43338.0	11374.0	10464.0	65176.0	0.337574E-01
238	.	2.00000	89656.0	62850.0	12813.4	165319.	0.856259E-01
239	.	2.00000	77881.0	353891.	42528.8	474301.	0.245661
241	.	2.00000	39679.0	23599.0	21788.0	85066.0	0.440593E-01
247	.	2.00000	98409.0	167334.	159804.	425547.	0.220409
249	.	2.00000	23444.0	59247.0	8284.00	90975.0	0.471198E-01
250	.	2.00000	195481.	49326.0	59116.8	303924.	0.157415
254	.	2.00000	175262.	139742.	195742.	510746.	0.264537
257	.	2.00000	37751.0	76632.0	10328.0	124711.	0.645931E-01
260	.	2.00000	22176.0	27033.0	0.0	49209.0	0.254874E-01
261	.	2.00000	117088.	29911.0	7090.20	154089.	0.798094E-01
264	.	2.00000	76188.0	37574.0	19455.8	133218.	0.689992E-01
265	.	2.00000	60387.0	54153.0	45500.4	160040.	0.828918E-01
266	.	2.00000	57215.0	26436.0	9500.00	93151.0	0.482469E-01
268	.	2.00000	97549.0	36867.0	95382.0	229798.	0.119022
280	.	2.00000	51324.0	14309.0	12497.8	78130.8	0.404673E-01
284	.	2.00000	69471.0	119898.	39927.4	229296.	0.118762
285	.	2.00000	57520.0	69981.0	22559.0	150060.	0.777225E-01
289	.	2.00000	48126.0	25592.0	31046.4	104764.	0.542619E-01
291	.	2.00000	174927.	175147.	72978.4	423052.	0.219117
292	.	1.00000	627478.	536673.	660657.	0.182481E+07	0.945146
293	.	2.00000	117767.	122130.	177564.	418461.	0.216739
297	.	2.00000	16345.0	200.000	13004.0	29549.0	0.153047E-01
298	.	2.00000	171675.	169727.	123732.	465374.	0.241016
301	.	2.00000	57632.0	81289.0	147548.	286469.	0.148375
303	.	2.00000	57064.0	17747.0	9428.00	86239.0	0.446669E-01
307	.	2.00000	58501.0	24985.0	10272.2	93758.2	0.485614E-01
309	.	2.00000	50998.0	51123.0	55552.6	157674.	0.316659E-01

ID NO.		IDT	TUG77	CUG77	ACG	TAG	ASH
310	.	2.00000	65493.0	71106.0	10388.0	146987.	0.761309E-01
311	.	2.00000	112286.	177707.	23284.0	313277.	0.162260
316	.	2.00000	30588.0	28779.0	24498.8	83865.8	0.434377E-01
318	.	2.00000	56153.0	13762.0	67382.8	137298.	0.711123E-01
320	.	2.00000	19958.0	44631.0	28999.6	93588.6	0.484735E-01
322	.	2.00000	25015.0	48874.0	7094.00	80983.0	0.419446E-01
325	.	2.00000	61192.0	68361.0	15032.0	144585.	0.748867E-01
326	.	2.00000	18634.0	3607.00	50161.6	72402.6	0.375004E-01
327	.	2.00000	103729.	210449.	428518.	742696.	0.384674
328	.	2.00000	97490.0	12749.0	99323.0	209562.	0.108541
331	.	2.00000	37545.0	8285.00	10883.4	56713.4	0.293743E-01
333	.	2.00000	104702.	80788.0	1000.00	186490.	0.965911E-01
335	.	2.00000	145637.	119974.	112506.	378117.	0.195843
345	.	2.00000	110747.	46994.0	24105.8	181847.	0.941862E-01
350	.	2.00000	102318.	125181.	54539.6	282039.	0.146080
2	.	3.00000	9073.00	8766.00	6209.20	24048.2	0.124556E-01
5	.	3.00000	29818.0	5573.00	6328.00	41719.0	0.216081E-01
6	.	3.00000	8404.00	6777.00	0.0	15181.0	0.786289E-02
7	.	3.00000	4755.00	75.0000	4936.00	9766.00	0.505823E-02
8	.	3.00000	14521.0	10141.0	27253.6	51915.6	0.268893E-01
10	.	3.00000	5301.00	1499.00	4620.00	11420.0	0.591491E-02
13	.	3.00000	11881.0	3700.00	4000.00	19581.0	0.101418E-01
18	.	3.00000	6812.00	2120.00	5463.00	14395.0	0.745579E-02
19	.	3.00000	25551.0	1879.00	11706.0	39136.0	0.202702E-01
22	.	3.00000	14802.0	3368.00	53288.8	71458.8	0.370115E-01
23	.	3.00000	65347.0	63131.0	44397.8	172876.	0.895398E-01
24	.	3.00000	25102.0	15865.0	13108.8	54075.8	0.280082E-01
25	.	3.00000	34164.0	2996.00	5880.00	43040.0	0.222923E-01
27	.	3.00000	22180.0	3480.00	8566.20	34226.2	0.177272E-01
29	.	3.00000	3455.00	75.0000	0.0	3530.00	0.182834E-02
31	.	3.00000	54188.0	37837.0	56127.4	148152.	0.767344E-01
32	.	3.00000	6105.00	4424.00	5258.00	15787.0	0.817676E-02
34	.	3.00000	22599.0	8384.00	0.0	30983.0	0.160474E-01
38	.	3.00000	8713.00	75.0000	0.0	8738.00	0.455168E-02
40	.	3.00000	33326.0	15060.0	1763.00	50149.0	0.259743E-01
41	.	3.00000	18311.0	14715.0	9634.80	42660.8	0.220959E-01
42	.	3.00000	22616.0	4969.00	1934.20	29519.2	0.152893E-01
44	.	3.00000	17177.0	37123.0	1261.60	55561.6	0.287777E-01
45	.	3.00000	8443.00	1210.00	8759.40	18412.4	0.953657E-02
51	.	3.00000	15658.0	38131.0	5612.00	59401.0	0.307663E-01
54	.	3.00000	12716.0	35838.0	27956.6	76510.6	0.396281E-01
55	.	3.00000	12059.0	24428.0	0.0	36487.0	0.188982E-01
59	.	3.00000	6538.00	4906.00	4363.40	15807.4	0.818733E-02
60	.	3.00000	7455.00	1357.00	0.0	8812.00	0.456411E-02
61	.	3.00000	13533.0	17809.0	3791.20	35133.2	0.181970E-01
62	.	3.00000	18692.0	1775.00	4829.00	25296.0	0.131019E-01
63	.	3.00000	4908.00	0.0	0.0	4908.00	0.254206E-02
64	.	3.00000	9451.00	5402.00	4772.00	19625.0	0.101646E-01
66	.	3.00000	11404.0	3806.00	5032.00	20242.0	0.104842E-01
67	.	3.00000	3727.00	1839.00	4067.60	9633.60	0.498965E-02

ID NO.		IJT	TUG77	COG77	ACG	TAG	ASH
68	.	3.00000	11348.0	766.000	6389.20	18503.2	0.958360E-02
73	.	3.00000	24427.0	8423.00	19834.2	52684.2	0.272874E-01
76	.	3.00000	12918.0	4717.00	5628.00	23263.0	0.120489E-01
77	.	3.00000	13193.0	165.000	0.0	13357.0	0.691816E-02
78	.	3.00000	6726.00	2003.00	4908.00	13637.0	0.706318E-02
79	.	3.00000	31988.0	35005.0	64919.6	131913.	0.683231E-01
81	.	3.00000	9663.00	0.0	3950.60	13613.6	0.705107E-02
83	.	3.00000	9713.00	4413.00	5532.00	19658.0	0.101817E-01
84	.	3.00000	8340.00	10283.0	3900.00	22523.0	0.116656E-01
85	.	3.00000	5432.00	75.0000	220.000	5777.00	0.299216E-02
87	.	3.00000	8809.00	4151.00	0.0	12960.0	0.671254E-02
89	.	3.00000	9218.00	11325.0	4928.00	25471.0	0.131925E-01
90	.	3.00000	12130.0	871.000	0.0	13001.0	0.673377E-02
93	.	3.00000	11003.0	6802.00	5168.00	22973.0	0.118987E-01
94	.	3.00000	13928.0	7974.00	18911.0	40813.0	0.211388E-01
96	.	3.00000	7524.00	75.0000	4580.00	12179.0	0.630803E-02
97	.	3.00000	11249.0	6236.00	5184.00	22669.0	0.117412E-01
102	.	3.00000	11464.0	2438.00	7185.20	21087.2	0.109220E-01
103	.	3.00000	25388.0	26675.0	0.0	52063.0	0.269657E-01
104	.	3.00000	18968.0	5204.00	8193.20	32365.2	0.167633E-01
105	.	3.00000	26307.0	7421.00	17713.6	51441.6	0.266438E-01
109	.	3.00000	10793.0	75.0000	0.0	10868.0	0.562900E-02
112	.	3.00000	19621.0	23057.0	6272.00	48950.0	0.253533E-01
113	.	3.00000	28516.0	7581.00	6988.00	43085.0	0.223156E-01
114	.	3.00000	9871.00	34077.0	24649.0	68597.0	0.355293E-01
120	.	3.00000	9983.00	3826.00	4780.00	18589.0	0.962804E-02
121	.	3.00000	1950.00	6540.00	0.0	8490.00	0.439733E-02
122	.	3.00000	7394.00	2256.00	0.0	9650.00	0.499815E-02
124	.	3.00000	45944.0	10605.0	11970.8	68519.8	0.354893E-01
125	.	3.00000	9391.00	2971.00	5093.60	17455.6	0.904100E-02
127	.	3.00000	27550.0	4445.00	19176.2	51171.2	0.265037E-01
128	.	3.00000	3735.00	868.000	0.400133E+07	0.401093E+07	2.07743
136	.	3.00000	9321.00	45754.0	14882.2	70457.2	0.364928E-01
139	.	3.00000	3692.00	75.0000	4384.00	8151.00	0.422175E-02
140	.	3.00000	9255.00	3651.00	282.400	13188.4	0.683084E-02
144	.	3.00000	9808.00	3075.00	4687.00	17570.0	0.910025E-02
145	.	3.00000	6816.00	3756.00	4796.00	15368.0	0.795975E-02
149	.	3.00000	8698.00	2194.00	0.0	10392.0	0.564143E-02
150	.	3.00000	12454.0	11125.0	72975.2	96554.2	0.500096E-01
152	.	3.00000	15266.0	1199.00	6017.20	22482.2	0.116445E-01
153	.	3.00000	7594.00	75.0000	4980.00	12649.0	0.655146E-02
154	.	3.00000	6630.00	4816.00	15839.8	27287.8	0.141335E-01
155	.	3.00000	19130.0	63380.0	0.0	82510.0	0.427355E-01
181	.	3.00000	10236.0	0.0	4892.00	15128.0	0.783544E-02
182	.	3.00000	15613.0	1183.00	8176.40	24972.4	0.129343E-01
[illegible]	.	3.00000	9172.00	33104.0	3810.00	46286.0	0.239735E-01
189	.	3.00000	14594.0	11602.0	5832.80	32028.8	0.165891E-01
190	.	3.00000	17940.0	14723.0	0.0	32663.0	0.169176E-01
199	.	3.00000	3439.00	31031.0	2681.80	37151.8	0.192425E-01
202	.	3.00000	41605.0	11623.0	83020.0	136248.	0.705667E-01

ID NO.		IOT	TUG77	COG77	ACG	TAG	ASH
205	.	3.00000	10097.0	1200.00	11647.6	22944.6	0.118840E-01
207	.	3.00000	6185.00	75.0000	3253.00	9513.00	0.492719E-02
208	.	3.00000	9073.00	8746.00	4246.00	22065.0	0.114284E-01
209	.	3.00000	11363.0	27568.0	0.0	38931.0	0.201640E-01
213	.	3.00000	25507.0	110.000	0.0	25617.0	0.132681E-01
214	.	3.00000	10590.0	75.0000	5031.00	15696.0	0.812963E-02
219	.	3.00000	41501.0	6119.00	7929.40	55549.4	0.287714E-01
220	.	3.00000	4605.00	1385.00	4360.00	10350.0	0.536071E-02
221	.	3.00000	5202.00	114.000	0.0	5316.00	0.275338E-02
223	.	3.00000	23213.0	49166.0	5454.40	77833.4	0.403132E-01
225	.	3.00000	6916.00	2345.00	0.0	9261.00	0.479667E-02
228	.	3.00000	2873.00	22075.0	2198.00	27146.0	0.140601E-01
229	.	3.00000	17521.0	1680.00	17294.6	36495.6	0.189026E-01
231	.	3.00000	11274.0	2569.00	18480.0	32323.0	0.167415E-01
233	.	3.00000	10591.0	75.0000	0.0	10666.0	0.552438E-02
234	.	3.00000	6413.00	3873.00	4924.00	15210.0	0.787791E-02
236	.	3.00000	13564.0	3342.00	5604.00	22510.0	0.116589E-01
240	.	3.00000	16187.0	8703.00	5940.00	30830.0	0.159682E-01
244	.	3.00000	6715.00	33550.0	4422.60	44687.6	0.231456E-01
248	.	3.00000	31108.0	22943.0	1727.60	55778.6	0.288901E-01
252	.	3.00000	11201.0	3380.00	8860.40	23441.4	0.121413E-01
259	.	3.00000	4761.00	135.000	5009.20	9905.20	0.513032E-02
270	.	3.00000	8609.00	75.0000	0.0	8684.00	0.449781E-02
271	.	3.00000	5420.00	596.000	4812.00	10828.0	0.560828E-02
272	.	3.00000	7863.00	2726.00	931.600	11520.6	0.596701E-02
274	.	3.00000	2671.00	75.0000	12218.0	14964.0	0.775050E-02
275	.	3.00000	28233.0	1696.00	7769.00	37698.0	0.195254E-01
276	.	3.00000	17226.0	1485.00	5712.00	24423.0	0.126497E-01
278	.	3.00000	18821.0	75.0000	6167.80	25063.8	0.129816E-01
281	.	3.00000	23177.0	5825.00	12154.0	41156.0	0.213165E-01
295	.	3.00000	8785.00	9048.00	0.0	17833.0	0.923647E-02
300	.	3.00000	24577.0	3100.00	18674.6	46351.6	0.240075E-01
304	.	3.00000	7619.00	1791.00	12050.2	21460.2	0.111152E-01
313	.	3.00000	16499.0	12438.0	87196.4	116133.	0.601504E-01
315	.	3.00000	21424.0	16257.0	49398.8	87079.8	0.451023E-01
317	.	3.00000	15374.0	11351.0	9120.00	35845.0	0.185657E-01
319	.	3.00000	4376.00	0.0	4584.00	8960.00	0.464077E-02
321	.	3.00000	56486.0	26925.0	8448.00	91859.0	0.475777E-01
330	.	3.00000	8577.00	16863.0	11523.0	36963.0	0.191447E-01
332	.	3.00000	12514.0	6697.00	3501.60	22712.6	0.117638E-01
337	.	3.00000	17038.0	671.000	5024.00	22733.0	0.117744E-01
338	.	3.00000	19639.0	1275.00	0.0	20914.0	0.108323E-01
339	.	3.00000	14436.0	20926.0	4943.20	40307.2	0.208768E-01
341	.	3.00000	3837.00	2303.00	0.0	6140.00	0.318017E-02
342	.	3.00000	11245.0	2693.00	2574.40	16512.4	0.855248E-02
343	.	3.00000	25145.0	6889.00	10527.0	42561.0	0.220442E-01
351	.	3.00000	23719.0	1135.00	5262.00	30116.0	0.155984E-01
352	.	3.00000	11655.0	70208.0	2274.00	84137.0	0.435781E-01
355	.	3.00000	19698.0	500.000	0.0	20198.0	0.104614E-01
133	.	5.00000	903104.	877591.	861.400	0.178156E+07	0.922744

ID NO.		IDT	TUG77	COG77	ACC	TAG	ASH
334	.	5.00000	433997.	444278.	0.0	878275.	0.454896
255	.	5.00000	287244.	952207.	0.0	0.123945E+07	0.641965
235	.	5.00000	456160.	644423.	0.0	0.110058E+07	0.570039
340	.	5.00000	437175.	508852.	0.0	946027.	0.489988
299	.	5.00000	349402.	277215.	0.0	626617.	0.324552
314	.	5.00000	263222.	514024.	231398.	0.100864E+07	0.522420
118	.	5.00000	493018.	751344.	0.0	0.124436E+07	0.644508
20	.	5.00000	437239.	467984.	0.0	905223.	0.468854
348	.	5.00000	453191.	496873.	0.0	950064.	0.492079
15	.	5.00000	375898.	843770.	42211.4	0.126188E+07	0.653581
12	.	5.00000	648966.	743304.	307923.	0.170019E+07	0.880602
286	.	5.00000	453372.	438674.	218295.	0.111034E+07	0.575093
195	.	5.00000	280961.	283593.	0.0	564554.	0.292407
349	.	5.00000	484068.	260534.	3153.00	747755.	0.387294
226	.	5.00000	411313.	926595.	8221.60	0.134613E+07	0.697218
243	.	5.00000	212212.	232099.	0.0	444311.	0.230128
294	.	5.00000	563474.	0.105320E+07	0.0	0.161668E+07	0.837347
302	.	5.00000	0.102605E+07	784852.	262694.	0.207359E+07	1.07400
323	.	5.00000	369177.	429446.	270356.	0.106898E+07	0.553670
49	.	5.00000	482384.	737764.	0.0	0.122015E+07	0.631967
263	.	5.00000	252001.	738104.	8000.00	998105.	0.516961
329	.	5.00000	564309.	584345.	0.0	0.114865E+07	0.594937
201	.	5.00000	322442.	712593.	4000.00	0.103904E+07	0.538161
204	.	5.00000	164711.	0.121740E+07	2402.20	0.138451E+07	0.717097
222	.	5.00000	479180.	451000.	5679.60	935860.	0.484722
193	.	5.00000	508103.	533471.	0.0	0.104157E+07	0.539476
110	.	5.00000	523775.	364472.	0.0	888247.	0.460061
198	.	5.00000	230044.	260984.	637.000	491665.	0.254654
245	.	5.00000	579345.	0.103579E+07	194725.	0.180986E+07	0.937403
53	.	6.00000	383285.	232941.	0.0	616226.	0.319170
251	.	6.00000	279258.	239389.	0.0	518647.	0.268629
312	.	6.00000	570274.	338753.	0.0	909027.	0.470824
353	.	6.00000	446612.	310180.	0.0	756792.	0.391975
111	.	6.00000	409685.	264817.	0.0	674502.	0.349354
1	.	6.00000	108156.	104962.	0.0	213118.	0.110383
269	.	6.00000	680143.	420305.	0.0	0.110645E+07	0.573077
296	.	6.00000	154349.	210964.	4754.80	400068.	0.207212
191	.	6.00000	345642.	296460.	5591.00	650693.	0.337022
258	.	6.00000	292629.	217583.	18188.0	518400.	0.268502
336	.	6.00000	555236.	240488.	0.0	795724.	0.412139
16	.	6.00000	413556.	410600.	0.0	824386.	0.426985
305	.	6.00000	366017.	469456.	0.0	835473.	0.432727
346	.	6.00000	426041.	485788.	10000.0	921829.	0.477455
287	.	6.00000	468164.	621886.	0.0	0.108999E+07	0.564552
290	.	6.00000	137589.	135352.	0.0	272941.	0.141366
246	.	6.00000	95483.0	164030.	0.0	259513.	0.134413
107	.	6.00000	139205.	256737.	9840.00	405722.	0.210172
		1	2	3	4	5	6

Appendix B

Comparison of Grant Shares Based on Service Volume, Fiscal Capacity and Tax Effort Measures With Existing Grant Shares for Individual Alberta Municipalities

Legend:

ID NO. = Identification number: see Appendix H for conversion from municipality name to ID No.

IDT = Municipality type:

1 = City
2 = Town
3 = Village
5 = County
6 = Municipal District

UGSH = Percentage share of 1977 unconditional grants for all municipalities.

ASH = Percentage share of total grants for all municipalities.

USSH = Percentage share of funds based on service volume, fiscal capacity and tax effort measures (U.S. revenue sharing model).

CGEUSSHU = Percentage change in USSH from UGSH.

CGEUSSH = Percentage change in USSH from ASH.

ID NO.	IDT	UGSH	ASH	USSH	CGFUSSHU	CGEUSSH
46	1.00000	19.0474	23.0685	26.2206	37.6593	11.6642
48	1.00000	0.506727	0.347312	1.08057	113.246	211.125
92	1.00000	0.155756	0.165162	0.696986	347.485	322.002
98	1.00000	17.5844	27.8270	21.9523	24.8400	-21.1116
132	1.00000	0.876456	0.931543	1.27595	45.5807	36.9717
203	1.00000	1.79360	2.11307	2.33285	30.0650	10.4006
217	1.00000	1.45531	3.81767	1.22443	-15.8647	-67.9274
262	1.00000	1.61740	1.16826	2.22192	37.3765	90.1902
347	1.00000	0.356074	0.426262	0.502947	41.2477	17.9901
3	2.00000	0.114715	0.730613E-01	0.427634E-01	-62.7220	-41.4691
11	2.00000	0.120692	0.577242E-01	0.112866	-6.48424	95.5267
14	2.00000	0.105026	0.101943	0.212801	102.618	108.745
16	2.00000	0.270441E-01	0.170445E-01	0.781385E-01	188.930	358.439
17	2.00000	0.615899E-01	0.443004E-01	0.138427	124.755	212.473
21	2.00000	0.820864E-01	0.465862E-01	0.103346	25.8987	121.638
30	2.00000	0.100149	0.372478E-01	0.103854	3.69873	178.817
33	2.00000	0.234101	0.928806E-01	0.227431	-2.84900	144.864
35	2.00000	0.191004	0.126287	0.341399	78.7386	170.335
39	2.00000	0.691202E-01	0.287857E-01	0.905969E-01	31.0716	214.729
43	2.00000	0.319343	0.317723	0.523841	64.0371	64.8734
47	2.00000	0.877690E-01	0.532853E-01	0.138072	57.3132	159.119
50	2.00000	0.952314E-01	0.815729E-01	0.990714E-01	4.03223	21.4514
52	2.00000	0.200749	0.998108E-01	0.324250	61.5203	224.865
56	2.00000	0.837287E-01	0.474588E-01	0.135046	61.2904	184.555
58	2.00000	0.672814E-01	0.876968E-01	0.784560E-01	16.6087	-10.5372
65	2.00000	0.373222	0.297491	0.384029	2.89545	29.0892
69	2.00000	0.258963	0.761697E-01	0.459297	77.3602	502.992
70	2.00000	0.116874	0.367346E-01	0.509082E-01	-56.4416	38.5839
71	2.00000	0.118584	0.605786E-01	0.107552	-9.30293	77.5410
72	2.00000	0.128659	0.516570E-01	0.276148	114.636	434.560
75	2.00000	0.624905E-01	0.295947E-01	0.132747	112.428	348.550
82	2.00000	0.461218E-01	0.185704E-01	0.675559E-01	46.4727	263.782
86	2.00000	0.165999	0.152328	0.155941	-6.05691	2.37226
88	2.00000	0.133739	0.108464	0.270620	102.349	149.502
91	2.00000	0.379793	0.203574	0.415979	9.52787	104.338
95	2.00000	0.404071E-01	0.334671E-01	0.701217E-01	73.5382	109.524
100	2.00000	0.266273	0.138306	0.328569	23.3951	137.566
101	2.00000	0.558608E-01	0.301489E-01	0.967764E-01	73.2455	220.994
106	2.00000	0.113916	0.628801E-01	0.215293	88.9924	242.386
108	2.00000	0.701530E-01	0.838867E-01	0.166381	137.169	98.3403
115	2.00000	0.207897	0.963161E-01	0.310012	49.1184	221.870
116	2.00000	2.42359	1.17428	1.17191	-51.6458	-0.202227
117	2.00000	0.408479	0.223656	0.307201	-24.7939	37.3541
119	2.00000	0.826868E-01	0.989337E-01	0.129253	56.3168	30.6465
126	2.00000	0.355250E-01	0.158465E-01	0.567350E-01	59.7042	258.029
130	2.00000	0.243434	0.115397	0.303101	24.5105	162.660
131	2.00000	0.258196	0.253459	0.625715	142.341	146.870

ID NO.		IDT	UGSH	ASH	USSH	CGEUSSHU	CGEUSSH
135	.	2.00000	0.343939E-01	0.143802E-01	0.775234E-01	125.399	439.099
137	.	2.00000	0.135322	0.632838E-01	0.145021	7.16686	129.159
141	.	2.00000	0.167325	0.106064	0.280731	67.7756	164.691
143	.	2.00000	0.481018E-01	0.451351E-01	0.456159E-01	-5.16797	1.06525
146	.	2.00000	0.931872E-01	0.164147	0.156269	67.6941	-4.79904
147	.	2.00000	0.191587	0.168860	0.247868	29.3763	46.7890
148	.	2.00000	0.205893	0.796938E-01	0.331080	60.3014	315.439
151	.	2.00000	0.291974	0.193091	0.333740	14.3048	72.8407
180	.	2.00000	0.155451	0.136038	0.336800	116.660	147.578
184	.	2.00000	0.118602E-01	0.239668E-01	0.552861E-01	366.150	130.678
188	.	2.00000	0.452515E-01	0.235704E-01	0.789802E-01	74.5359	235.082
192	.	2.00000	0.107601	0.143512	0.267689	148.780	86.5269
194	.	2.00000	0.197734	0.125777	0.389888	97.1780	209.982
197	.	2.00000	0.523226E-01	0.577791E-01	0.852894E-01	63.0068	47.6129
200	.	2.00000	0.486945	0.277286	0.604501	24.1416	118.007
211	.	2.00000	0.137361	0.444877E-01	0.134949	-1.75589	203.341
212	.	2.00000	0.909624E-01	0.107476	0.149428	64.2743	39.0336
215	.	2.00000	0.767005E-01	0.777956E-01	0.978081E-01	27.5195	25.7244
216	.	2.00000	0.117579	0.547782E-01	0.361818	207.722	560.514
218	.	2.00000	0.413577E-01	0.728345E-01	0.564591E-01	36.5140	-22.4830
224	.	2.00000	0.171569	0.951926E-01	0.135163	-21.2197	36.2628
227	.	2.00000	0.403445E-01	0.207001E-01	0.670475E-01	66.1876	223.900
232	.	2.00000	0.774438E-01	0.337574E-01	0.127158	64.1943	276.682
238	.	2.00000	0.160213	0.856259E-01	0.203188	26.8233	137.297
239	.	2.00000	0.139171	0.245661	0.305259	119.340	24.2603
241	.	2.00000	0.709053E-01	0.440593E-01	0.121366	71.1666	175.461
247	.	2.00000	0.175854	0.220409	0.409841	133.059	85.9469
249	.	2.00000	0.418938E-01	0.471198E-01	0.908160E-01	116.776	92.7339
250	.	2.00000	0.349320	0.157415	0.465864	33.3633	195.946
254	.	2.00000	0.313179	0.264537	0.407767	30.1986	54.1435
257	.	2.00000	0.674601E-01	0.645931E-01	0.139493	106.779	115.957
260	.	2.00000	0.396279E-01	0.254874E-01	0.109246	175.674	328.625
261	.	2.00000	0.209233	0.798094E-01	0.278643	33.1735	249.136
264	.	2.00000	0.136146	0.689992E-01	0.306669	125.250	344.453
265	.	2.00000	0.107910	0.328918E-01	0.103656	-3.94260	25.0463
266	.	2.00000	0.102242	0.482469E-01	0.142836	39.7041	196.052
268	.	2.00000	0.174316	0.119022	0.344195	97.4530	189.186
280	.	2.00000	0.917147E-01	0.404673E-01	0.113192	23.4177	179.713
284	.	2.00000	0.124143	0.118762	0.383653	209.042	223.043
285	.	2.00000	0.102787	0.777225E-01	0.107023	4.12083	37.6983
289	.	2.00000	0.659978E-01	0.542619E-01	0.978395E-01	13.7670	80.3096
291	.	2.00000	0.312590	0.219117	0.575325	84.0509	162.565
292	.	1.00000	1.12179	0.945146	2.14851	91.6114	127.321
293	.	2.00000	0.210447	0.216739	0.390936	85.7647	80.3716
297	.	2.00000	0.292081E-01	0.153047E-01	0.456917E-01	56.4351	198.547
298	.	2.00000	0.307136	0.241016	0.377233	22.8228	56.5176
301	.	2.00000	0.102987	0.143375	0.301582	192.835	103.257
303	.	2.00000	0.105546	0.446669E-01	0.149533	41.6757	234.774
307	.	2.00000	0.104540	0.485614E-01	0.146941	40.5603	202.589
309	.	2.00000	0.911321E-01	0.816659E-01	0.191710	110.365	134.749

ID NO.		IDT	UCSH	ASH	USSH	CGEUSSHU	CGEUSSH
310	.	2.00000	0.117034	0.761309E-01	0.670662E-01	-25.6062	14.3639
311	.	2.00000	0.200652	0.162260	0.463741	131.117	185.802
316	.	2.00000	0.546600E-01	0.434377E-01	0.135230	147.402	211.319
318	.	2.00000	0.100344	0.711123E-01	0.101180	0.833607	42.2825
320	.	2.00000	0.356644E-01	0.484735E-01	0.745142E-01	108.931	53.7214
322	.	2.00000	0.447012E-01	0.419446E-01	0.110237	146.610	162.817
325	.	2.00000	0.109349	0.748867E-01	0.160273	46.5712	114.021
326	.	2.00000	0.332985E-01	0.375004E-01	0.958417E-01	187.826	155.575
327	.	2.00000	0.185361	0.384674	0.366607	97.7799	-4.69670
328	.	2.00000	0.174212	0.108541	0.491211	181.961	352.557
331	.	2.00000	0.670919E-01	0.293743E-01	0.179029	166.841	509.474
333	.	2.00000	0.187100	0.965911E-01	0.169461	-9.42723	75.4420
335	.	2.00000	0.260250	0.195843	0.382103	46.8216	95.1066
345	.	2.00000	0.197902	0.941862E-01	0.295745	49.4402	214.001
350	.	2.00000	0.182840	0.146080	0.271633	48.5633	85.9481
2	.	3.00000	0.162132E-01	0.124556E-01	0.256521E-01	58.2169	105.948
5	.	3.00000	0.532840E-01	0.216081E-01	0.107196	101.178	396.092
6	.	3.00000	0.150177E-01	0.786289E-02	0.213857E-01	42.4028	171.982
7	.	3.00000	0.849706E-02	0.505823E-02	0.946964E-02	11.4459	87.2125
8	.	3.00000	0.259486E-01	0.268893E-01	0.339453E-01	30.8170	26.2407
10	.	3.00000	0.947275E-02	0.591491E-02	0.801022E-02	-15.4394	35.4241
13	.	3.00000	0.212310E-01	0.101418E-01	0.385926E-01	81.7743	280.529
18	.	3.00000	0.121729E-01	0.745579E-02	0.154046E-01	26.5487	106.613
19	.	3.00000	0.456590E-01	0.202702E-01	0.131886	188.851	550.641
22	.	3.00000	0.264508E-01	0.370115E-01	0.346936E-01	31.1626	-6.26283
23	.	3.00000	0.116773	0.895398E-01	0.294633	152.312	229.053
24	.	3.00000	0.448566E-01	0.280082E-01	0.771980E-01	72.0993	175.627
25	.	3.00000	0.610502E-01	0.222923E-01	0.466400E-01	-23.6038	109.221
27	.	3.00000	0.396351E-01	0.177272E-01	0.722079E-01	82.1816	307.328
29	.	3.00000	0.617399E-02	0.182834E-02	0.122827E-02	-80.1057	-32.8204
31	.	3.00000	0.968326E-01	0.767344E-01	0.120768	24.7187	57.3848
32	.	3.00000	0.109095E-01	0.817676E-02	0.114671E-01	5.11160	40.2405
34	.	3.00000	0.403838E-01	0.160474E-01	0.636698E-01	57.6616	296.760
38	.	3.00000	0.155699E-01	0.455168E-02	0.733501E-02	-52.8898	61.1495
40	.	3.00000	0.595527E-01	0.259743E-01	0.589051E-01	-1.08755	126.782
41	.	3.00000	0.327213E-01	0.220959E-01	0.295317E-01	-9.74777	33.6525
42	.	3.00000	0.404142E-01	0.152893E-01	0.344709E-01	-14.7059	125.458
44	.	3.00000	0.306949E-01	0.287777E-01	0.483856E-01	57.6342	68.1355
45	.	3.00000	0.150874E-01	0.953657E-02	0.202475E-01	34.2012	112.314
51	.	3.00000	0.279804E-01	0.307663E-01	0.369586E-01	32.0870	20.1266
54	.	3.00000	0.227232E-01	0.396281E-01	0.515156E-01	126.709	29.9975
55	.	3.00000	0.215491E-01	0.188982E-01	0.649336E-01	201.328	243.597
59	.	3.00000	0.116832E-01	0.818733E-02	0.684812E-02	-41.3851	-16.3571
60	.	3.00000	0.133219E-01	0.456411E-02	0.185380E-01	39.1542	306.168
61	.	3.00000	0.241831E-01	0.181970E-01	0.287781E-01	19.0007	58.1475
62	.	3.00000	0.334021E-01	0.131019E-01	0.241052E-01	-27.8333	83.9827
63	.	3.00000	0.877047E-02	0.254206E-02	-0.604964E-03	-106.898	-123.798
64	.	3.00000	0.168887E-01	0.101646E-01	0.422792E-01	150.340	315.945
66	.	3.00000	0.203787E-01	0.104842E-01	0.187287E-01	-8.09662	78.6371
67	.	3.00000	0.666005E-02	0.498965E-02	0.264707E-02	-60.2545	-46.9488

ID NO.		IDT	UGSH	ASH	USSH	CGEUSSHU	CGEUSSH
68	.	3.00000	0.202786E-01	0.958360E-02	0.273966E-01	35.1012	185.870
73	.	3.00000	0.436504E-01	0.272874E-01	0.568492E-01	30.2374	108.335
76	.	3.00000	0.230841E-01	0.120489E-01	0.136921E-01	-40.6863	13.6373
77	.	3.00000	0.235738E-01	0.691816E-02	0.238555E-01	1.19486	244.824
78	.	3.00000	0.120192E-01	0.706318E-02	0.176668E-01	46.9879	150.125
79	.	3.00000	0.571617E-01	0.683231E-01	0.930287E-01	62.7463	36.1598
81	.	3.00000	0.172675E-01	0.705107E-02	0.199826E-01	15.7233	163.398
83	.	3.00000	0.173569E-01	0.101817E-01	0.481141E-01	177.205	372.553
84	.	3.00000	0.149034E-01	0.116656E-01	0.129083E-01	-13.3865	10.6526
85	.	3.00000	0.979619E-02	0.299216E-02	0.986984E-02	0.751686	229.857
87	.	3.00000	0.157415E-01	0.671254E-02	0.192251E-01	22.1304	186.406
89	.	3.00000	0.164723E-01	0.131925E-01	0.134496E-01	-18.3501	1.94893
90	.	3.00000	0.216760E-01	0.673377E-02	0.402882E-01	85.8653	498.300
93	.	3.00000	0.196621E-01	0.118987E-01	0.220940E-01	12.3687	85.6843
94	.	3.00000	0.248890E-01	0.211388E-01	0.227412E-01	-8.62942	7.58028
96	.	3.00000	0.134452E-01	0.630803E-02	0.471729E-02	-64.9147	-25.2177
97	.	3.00000	0.201017E-01	0.117412E-01	0.341438E-01	69.8554	190.802
102	.	3.00000	0.204659E-01	0.109220E-01	0.140476E-01	-31.4281	28.6175
103	.	3.00000	0.453677E-01	0.269657E-01	0.689578E-01	51.9976	155.725
104	.	3.00000	0.338953E-01	0.167633E-01	0.398499E-01	17.5675	137.721
105	.	3.00000	0.470099E-01	0.266438E-01	0.548500E-01	16.6775	105.864
109	.	3.00000	0.192968E-01	0.562900E-02	0.224644E-01	16.4755	299.083
112	.	3.00000	0.350622E-01	0.253533E-01	0.306592E-01	-12.5576	20.9279
113	.	3.00000	0.509574E-01	0.223156E-01	0.834208E-01	63.7071	273.823
114	.	3.00000	0.176392E-01	0.355293E-01	0.159441E-01	-9.61013	-55.1242
120	.	3.00000	0.178394E-01	0.962804E-02	0.102850E-01	-42.3463	6.82383
121	.	3.00000	0.348460E-02	0.439733E-02	0.203043E-02	-41.7312	-53.8258
122	.	3.00000	0.132129E-01	0.499815E-02	0.178879E-01	35.3820	257.890
124	.	3.00000	0.821007E-01	0.354893E-01	0.181563	121.147	411.600
125	.	3.00000	0.167815E-01	0.904100E-02	0.316569E-01	88.6416	250.146
127	.	3.00000	0.492312E-01	0.265037E-01	0.445373E-01	-9.53434	68.0415
128	.	3.00000	0.156092E-01	2.07743	0.142158E-01	-8.92687	-99.3157
136	.	3.00000	0.175499E-01	0.364928E-01	0.237072E-01	35.0847	-35.0359
139	.	3.00000	0.659751E-02	0.422175E-02	0.425987E-02	-35.4321	0.903034
140	.	3.00000	0.165364E-01	0.683084E-02	0.192669E-01	16.4978	182.058
144	.	3.00000	0.175266E-01	0.910025E-02	0.230776E-01	31.6716	153.593
145	.	3.00000	0.121800E-01	0.795975E-02	0.993612E-02	-18.4227	24.8296
149	.	3.00000	0.155431E-01	0.564143E-02	0.378729E-01	143.663	571.334
150	.	3.00000	0.222550E-01	0.500096E-01	0.516282E-01	131.985	3.23658
152	.	3.00000	0.272800E-01	0.116445E-01	0.329063E-01	20.6246	182.591
153	.	3.00000	0.135703E-01	0.655146E-02	0.195367E-01	44.3352	198.967
154	.	3.00000	0.118476E-01	0.141335E-01	0.186789E-01	57.6593	32.1604
155	.	3.00000	0.341348E-01	0.427355E-01	0.433130E-01	26.7024	1.35136
161	.	3.00000	0.182915E-01	0.783544E-02	0.272513E-01	46.9835	247.795
162	.	3.00000	0.279000E-01	0.129343E-01	0.641400E-01	129.892	395.892
163	.	3.00000	0.163901E-01	0.239735E-01	0.442412E-01	169.926	84.5421
189	.	3.00000	0.260791E-01	0.165891E-01	0.407390E-01	56.2131	145.577
190	.	3.00000	0.320583E-01	0.169176E-01	0.408814E-01	27.5218	141.650
199	.	3.00000	0.614540E-02	0.192425E-01	0.120211E-01	95.6113	-37.5284
202	.	3.00000	0.743471E-01	0.705687E-01	0.889877E-01	19.6922	26.1008

ID NO.		IDT	UGSH	ASH	USSH	CGEUSSHU	CGEUSSH
205	.	3.00000	0.160431E-01	0.118840E-01	0.157178E-01	-12.8875	32.2600
207	.	3.00000	0.110524E-01	0.492719E-02	0.108689E-01	-1.66017	120.591
208	.	3.00000	0.162132E-01	0.114284E-01	0.123815E-01	-23.6335	8.33941
209	.	3.00000	0.203054E-01	0.201640E-01	0.337148E-01	66.0385	67.2025
213	.	3.00000	0.455803E-01	0.132681E-01	0.696958E-01	52.9076	425.287
214	.	3.00000	0.189241E-01	0.812963E-02	0.304547E-01	60.9311	274.614
219	.	3.00000	0.741612E-01	0.287714E-01	0.996123E-01	34.3185	246.220
220	.	3.00000	0.822902E-02	0.536071E-02	0.243504E-02	-70.4091	-54.5761
221	.	3.00000	0.929584E-02	0.275338E-02	0.155485E-01	67.2635	464.707
223	.	3.00000	0.414810E-01	0.403132E-01	0.832829E-01	100.773	106.589
225	.	3.00000	0.123587E-01	0.479667E-02	0.230132E-01	91.0647	392.282
228	.	3.00000	0.513398E-02	0.140601E-01	0.152630E-01	197.294	8.55570
229	.	3.00000	0.313096E-01	0.189026E-01	0.410885E-01	31.2329	117.369
231	.	3.00000	0.201464E-01	0.167415E-01	0.161537E-01	-19.8182	-3.51081
233	.	3.00000	0.189258E-01	0.552438E-02	0.208970E-01	10.4151	278.269
234	.	3.00000	0.114599E-01	0.787791E-02	0.218570E-01	90.7266	177.447
236	.	3.00000	0.242385E-01	0.116589E-01	0.280127E-01	15.5709	140.269
240	.	3.00000	0.289258E-01	0.159682E-01	0.307277E-01	6.22959	92.4310
244	.	3.00000	0.119995E-01	0.231456E-01	0.110893E-01	-7.58592	-52.0892
248	.	3.00000	0.555892E-01	0.288901E-01	0.585975E-01	5.41153	102.829
252	.	3.00000	0.200159E-01	0.121413E-01	0.365817E-01	82.7634	201.300
259	.	3.00000	0.850778E-02	0.513032E-02	0.133003E-01	56.3309	159.249
270	.	3.00000	0.153841E-01	0.449781E-02	0.188712E-01	22.6670	319.563
271	.	3.00000	0.968540E-02	0.560828E-02	0.156248E-01	61.3233	178.602
272	.	3.00000	0.140510E-01	0.596701E-02	0.206603E-01	47.0382	246.242
274	.	3.00000	0.477301E-02	0.775050E-02	0.562613E-02	17.8748	-27.4088
275	.	3.00000	0.504517E-01	0.195254E-01	0.614901E-01	21.8791	214.923
276	.	3.00000	0.307824E-01	0.126497E-01	0.430324E-01	39.7954	240.185
278	.	3.00000	0.336326E-01	0.129816E-01	0.533840E-01	58.7268	311.228
281	.	3.00000	0.414167E-01	0.213165E-01	0.136554	229.707	540.602
295	.	3.00000	0.156986E-01	0.923647E-02	0.198822E-01	26.6499	115.258
300	.	3.00000	0.439185E-01	0.240075E-01	0.148008	237.006	516.507
304	.	3.00000	0.136150E-01	0.111152E-01	0.313008E-01	129.900	181.604
313	.	3.00000	0.294833E-01	0.601504E-01	0.601733E-01	104.093	0.379562E-01
315	.	3.00000	0.382841E-01	0.451023E-01	0.297243E-01	-22.3586	-34.0957
317	.	3.00000	0.274729E-01	0.185657E-01	0.439603E-01	60.0130	136.783
319	.	3.00000	0.781980E-02	0.464077E-02	0.201594E-01	157.799	334.397
321	.	3.00000	0.100939	0.475777E-01	0.452530E-01	-55.1680	-4.88611
330	.	3.00000	0.153269E-01	0.191447E-01	0.142649E-01	-6.92914	-25.4693
332	.	3.00000	0.223622E-01	0.117638E-01	0.208414E-01	-6.60099	77.1647
337	.	3.00000	0.304465E-01	0.117744E-01	0.249197E-01	-18.1523	111.643
338	.	3.00000	0.350944E-01	0.108323E-01	0.506917E-01	44.4439	367.970
339	.	3.00000	0.258003E-01	0.208768E-01	0.248383E-01	-3.72868	18.9755
341	.	3.00000	0.685662E-02	0.318017E-02	0.603501E-02	-11.9827	89.7702
342	.	3.00000	0.200945E-01	0.855248E-02	0.343301E-01	70.8427	301.405
343	.	3.00000	0.449335E-01	0.220442E-01	0.833701E-01	85.5412	278.196
351	.	3.00000	0.423852E-01	0.155984E-01	0.388564E-01	-8.32572	149.105
352	.	3.00000	0.208272E-01	0.435781E-01	0.173133E-01	-16.8714	-60.2706
355	.	3.00000	0.351998E-01	0.104614E-01	0.367794E-01	4.48732	251.572
133	.	5.00000	1.61392	0.922744	0.264283	-83.6238	-71.3590

ID NO.		IDT	UGSH	ASH	USSH	CGEUSSHU	CGEUSSH
334	.	5.00000	0.775541	0.454896	0.878034E-01	-88.6784	-30.6961
255	.	5.00000	0.513298	0.641965	0.493324	-3.89122	-23.1540
235	.	5.00000	0.815146	0.570039	0.455002E-01	-94.4182	-92.0181
340	.	5.00000	0.781221	0.489986	0.130163	-87.1797	-79.5552
299	.	5.00000	0.624372	0.324552	0.994369E-01	-84.0661	-69.3464
314	.	5.00000	0.470371	0.522420	0.458148E-01	-90.2598	-91.2303
118	.	5.00000	0.881011	0.644508	0.121384	-86.2222	-81.1664
20	.	5.00000	0.781335	0.468854	0.165192	-78.8577	-64.7668
348	.	5.00000	0.809841	0.492079	0.403784	-50.1403	-17.9432
15	.	5.00000	0.671720	0.653581	0.374168	-44.2971	-42.7512
12	.	5.00000	1.15969	0.880602	0.636781	-45.0902	-27.6880
286	.	5.00000	0.810164	0.575093	0.129658	-83.9961	-77.4544
195	.	5.00000	0.502070	0.292407	0.212974	-57.5809	-27.1653
349	.	5.00000	0.865017	0.387294	0.664009E-01	-92.3237	-82.8552
226	.	5.00000	0.735006	0.697218	0.173318	-76.4196	-75.1415
243	.	5.00000	0.379218	0.230128	0.112975E-01	-97.0208	-95.0907
294	.	5.00000	1.00691	0.837347	0.443813	-55.9234	-46.9977
302	.	5.00000	1.83352	1.07400	1.44964	-20.9365	34.9760
323	.	5.00000	0.659710	0.553670	0.128801	-80.4761	-76.7368
49	.	5.00000	0.862008	0.631967	0.365533	-57.5952	-42.1595
263	.	5.00000	0.450319	0.516961	0.508327	12.8813	-1.67023
329	.	5.00000	1.00841	0.594937	0.284212	-71.8158	-52.2283
201	.	5.00000	0.576195	0.538161	0.128888	-77.6312	-76.0503
204	.	5.00000	0.294334	0.717097	0.667976	126.945	-6.85002
222	.	5.00000	0.856283	0.484722	0.165486	-80.6739	-65.8596
193	.	5.00000	0.907967	0.539476	0.461243	-49.2005	-14.5016
110	.	5.00000	0.935972	0.460061	0.111726	-88.0631	-75.7150
198	.	5.00000	0.411083	0.254654	0.300500	-26.9005	18.0029
245	.	5.00000	1.03527	0.937403	0.111150	-89.2637	-88.1428
53	.	6.00000	0.684920	0.319170	0.124700	-81.7935	-60.9299
251	.	6.00000	0.499027	0.268629	0.505441E-01	-89.8715	-81.1844
312	.	6.00000	1.01906	0.470624	0.949186E-01	-90.6857	-79.8399
353	.	6.00000	0.798084	0.391975	0.753423E-01	-90.5596	-80.7788
111	.	6.00000	0.732097	0.349354	0.203996	-72.1354	-41.6077
1	.	6.00000	0.193272	0.110383	0.103975E-02	-99.4620	-99.0580
269	.	6.00000	1.21540	0.573077	0.309631	-74.5243	-45.9704
296	.	6.00000	0.329427	0.207212	0.680996E-01	-79.3279	-67.1353
191	.	6.00000	0.623014	0.337022	0.174026	-72.0672	-48.3637
258	.	6.00000	0.505051	0.268502	0.157263E-01	-96.8562	-94.1429
336	.	6.00000	0.992193	0.412139	0.679221E-01	-93.1543	-83.5196
36	.	6.00000	0.739067	0.426955	1.12721	52.5174	163.992
305	.	6.00000	0.654063	0.432727	0.509193	-22.1492	17.6707
346	.	6.00000	0.761325	0.477455	0.39[illegible]203	-47.0960	-16.5968
287	.	6.00000	0.836490	0.564552	0.198199	-76.3059	-64.8927
290	.	6.00000	0.245868	0.141368	0.383944E-01	-84.3841	-72.8408
246	.	6.00000	0.170626	0.134413	0.530828E-01	-68.8893	-60.5076
107	.	6.00000	0.248756	0.210172	0.430094E-01	-82.7102	-79.5361
		1	2	3	4	5	6

Appendix C

Comparison of Grant Shares Based on "Indexing" of Service Volume, Fiscal Capacity and Unit Cost Measures With Existing Grant Shares for Individual Alberta Municipalities

Legend:

- ID NO. = Identification number: see Appendix H for conversion from municipality name to ID No.
- IDT = Municipality type:
  - 1 = City
  - 2 = Town
  - 3 = Village
  - 5 = County
  - 6 = Municipal District
- UGSH = Percentage share of 1977 unconditional grants for all municipalities.
- ASH = Percentage share of total grants for all municipalities.
- INDEXSH = Percentage share of funds based on "indexing" of service volume, fiscal capacity and unit cost measures.
- CGEIDSHU = Percentage change in INDEXSH from UGSH.
- CGEINDSH = Percentage change in INDEXSH from ASH.

ID NO.		IDT	UGSH	ASH	INDEXSH	CGLIDSHU	CGEINDSH
46	.	1.00000	19.0474	23.0685	26.9735	41.6125	16.9282
48	.	1.00000	0.506727	0.347312	0.646685	27.6199	85.1968
92	.	1.00000	0.155756	0.165162	0.458487	194.362	177.599
98	.	1.00000	17.5844	27.8270	28.2891	60.8766	1.66054
132	.	1.00000	0.876456	0.931543	0.947761	8.13560	1.74093
203	.	1.00000	1.79360	2.11307	2.90495	61.9617	37.4749
217	.	1.00000	1.45531	3.81767	0.273733	-81.1907	-92.8298
262	.	1.00000	1.61740	1.16826	2.48216	53.4664	112.466
347	.	1.00000	0.356074	0.426262	0.433518	21.7493	1.70221
3	.	2.00000	0.114715	0.730613E-01	0.582799E-01	-49.1958	-20.2314
11	.	2.00000	0.120692	0.577242E-01	0.113209	-6.20052	96.1200
14	.	2.00000	0.105026	0.101943	0.174694	66.3340	71.3633
16	.	2.00000	0.270441E-01	0.170445E-01	0.518735E-01	91.8109	204.342
17	.	2.00000	0.615899E-01	0.443004E-01	0.580072E-01	-5.81692	30.9407
21	.	2.00000	0.820864E-01	0.465862E-01	0.961710E-01	17.1582	106.436
30	.	2.00000	0.100149	0.372478E-01	0.521654E-01	-47.9123	40.0495
33	.	2.00000	0.234101	0.928806E-01	0.211682	-9.57668	127.907
35	.	2.00000	0.191004	0.126287	0.190926	-0.408530E-01	51.1841
39	.	2.00000	0.691202E-01	0.287857E-01	0.855411E-01	23.7570	197.165
43	.	2.00000	0.319343	0.317723	0.439407	37.5972	38.2987
47	.	2.00000	0.877690E-01	0.532853E-01	0.677722E-01	-22.7835	27.1873
50	.	2.00000	0.952314E-01	0.815729E-01	0.113403	19.0815	39.0204
52	.	2.00000	0.200749	0.998108E-01	0.210958	5.08566	111.358
56	.	2.00000	0.837287E-01	0.474588E-01	0.909404E-01	8.61311	91.6197
58	.	2.00000	0.672814E-01	0.876968E-01	0.508422E-01	-24.4334	-42.0250
65	.	2.00000	0.373222	0.297491	0.283205	-24.1188	-4.80196
69	.	2.00000	0.258963	0.761697E-01	0.230523	-10.9823	202.644
70	.	2.00000	0.116874	0.367346E-01	0.615292E-01	-47.3541	67.4965
71	.	2.00000	0.118584	0.605786E-01	0.852909E-01	-28.0753	40.7938
72	.	2.00000	0.128659	0.516570E-01	0.149962	16.5579	190.303
75	.	2.00000	0.624905E-01	0.295947E-01	0.643660E-01	3.00131	117.492
82	.	2.00000	0.461218E-01	0.185704E-01	0.299932E-01	-34.9695	61.5107
86	.	2.00000	0.165999	0.152328	0.767946E-01	-53.7380	-49.5659
88	.	2.00000	0.133739	0.108464	0.167610	25.3260	54.5301
91	.	2.00000	0.379793	0.203574	0.364125	-4.12524	78.8665
95	.	2.00000	0.404071E-01	0.334671E-01	0.552816E-01	36.8117	65.1821
100	.	2.00000	0.266273	0.138306	0.253042	-4.96928	82.9573
101	.	2.00000	0.558608E-01	0.301489E-01	0.560631E-01	0.362015	85.9536
106	.	2.00000	0.113916	0.628801E-01	0.161629	41.8843	157.043
108	.	2.00000	0.701530E-01	0.838867E-01	0.106597	51.9494	27.0727
115	.	2.00000	0.207897	0.963161E-01	0.243313	17.0356	152.619
116	.	2.00000	2.42359	1.17428	1.14532	-52.7427	-2.46621
117	.	2.00000	0.408479	0.223656	0.283118	-30.6897	26.5862
119	.	2.00000	0.826868E-01	0.989337E-01	0.138173	67.1041	39.6624
126	.	2.00000	0.355250E-01	0.158465E-01	0.336447E-01	-5.29287	112.317
130	.	2.00000	0.243434	0.115397	0.159315	-34.5554	38.0581
131	.	2.00000	0.258196	0.253459	0.389663	50.9172	53.7379

ID NO.		IDT	UGSH	ASH	INDEXSH	CGEIDSHU	CGEINDSH
135	.	2.00000	0.343939E-01	0.143802E-01	0.271352E-01	-21.1046	88.6986
137	.	2.00000	0.135322	0.632838E-01	0.103569	-23.4646	63.6585
141	.	2.00000	0.167365	0.106064	0.187598	12.1158	76.8726
143	.	2.00000	0.481018E-01	0.451351E-01	0.507038E-01	5.40943	12.3379
146	.	2.00000	0.931872E-01	0.164147	0.140857	51.1552	-14.1883
147	.	2.00000	0.191587	0.168860	0.209756	9.48353	24.2186
148	.	2.00000	0.205893	0.796938E-01	0.197342	-4.15347	147.625
151	.	2.00000	0.291974	0.193091	0.272715	-6.59608	41.2362
180	.	2.00000	0.155451	0.136038	0.231763	49.0911	70.3668
184	.	2.00000	0.118602E-01	0.239668E-01	0.456912E-01	285.250	90.6439
188	.	2.00000	0.452515E-01	0.235704E-01	0.548591E-01	21.2314	132.745
192	.	2.00000	0.107601	0.143512	0.253867	135.934	76.8953
194	.	2.00000	0.197734	0.125777	0.239323	21.0324	90.2745
197	.	2.00000	0.523226E-01	0.577791E-01	0.508574E-01	-2.80033	-11.9796
200	.	2.00000	0.486945	0.277286	0.447772	-8.04455	61.4841
211	.	2.00000	0.137361	0.444877E-01	0.104127	-24.1949	134.057
212	.	2.00000	0.909624E-01	0.107476	0.100233	10.1916	-0.73922
215	.	2.00000	0.767005E-01	0.777956E-01	0.618415E-01	-19.3727	-20.5077
216	.	2.00000	0.117579	0.547782E-01	0.130440	10.9381	138.125
218	.	2.00000	0.413577E-01	0.728345E-01	0.496576E-01	20.0685	-31.8213
224	.	2.00000	0.171569	0.991926E-01	0.105123	-38.7283	5.97906
227	.	2.00000	0.403445E-01	0.207001E-01	0.461765E-01	14.4553	123.073
232	.	2.00000	0.774438E-01	0.337574E-01	0.964571E-01	24.5509	185.736
238	.	2.00000	0.160213	0.856259E-01	0.122169	-23.7461	42.6771
239	.	2.00000	0.139171	0.245661	0.197163	41.6689	-19.7419
241	.	2.00000	0.709053E-01	0.440593E-01	0.917427E-01	29.3876	108.225
247	.	2.00000	0.175854	0.220409	0.350258	99.1747	58.9126
249	.	2.00000	0.418938E-01	0.471198E-01	0.581886E-01	38.8953	23.4905
250	.	2.00000	0.349320	0.157415	0.264849	-24.1815	68.2487
254	.	2.00000	0.313189	0.264537	0.274966	-12.2043	3.94230
257	.	2.00000	0.674601E-01	0.645931E-01	0.109391	62.1572	69.3544
260	.	2.00000	0.396279E-01	0.254874E-01	0.104711	164.236	310.834
261	.	2.00000	0.209233	0.798094E-01	0.164012	-21.6128	105.505
264	.	2.00000	0.136146	0.689992E-01	0.161245	18.4353	133.691
265	.	2.00000	0.107910	0.828918E-01	0.790132E-01	-26.7787	-4.67911
266	.	2.00000	0.102242	0.482469E-01	0.897319E-01	-12.2355	85.9849
268	.	2.00000	0.174318	0.119022	0.266350	52.7955	123.781
280	.	2.00000	0.917147E-01	0.404673E-01	0.553431E-01	-39.6573	36.7601
284	.	2.00000	0.124143	0.116762	0.258866	108.522	117.969
285	.	2.00000	0.102787	0.777225E-01	0.718061E-01	-30.1407	-7.61223
289	.	2.00000	0.859999E-01	0.542619E-01	0.786785E-01	-8.51322	44.9976
291	.	2.00000	0.312590	0.219117	0.359456	14.9927	64.0474
292	.	1.00000	1.12129	0.945146	1.39363	24.2885	47.4512
293	.	2.00000	0.210447	0.216739	0.241918	14.9547	11.6173
297	.	2.00000	0.292081E-01	0.153047E-01	0.354600E-01	21.4731	131.824
298	.	2.00000	0.307136	0.241016	0.334759	8.99363	38.8947
301	.	2.00000	0.102987	0.148375	0.198479	92.7224	33.7686
303	.	2.00000	0.105546	0.446669E-01	0.821822E-01	-22.1361	83.9891
307	.	2.00000	0.104540	0.445614E-01	0.101281	-3.11760	108.562
309	.	2.00000	0.911321E-01	0.816659E-01	0.157659	73.0007	93.0539

ID NO.		IDT	UGSH	ASH	INDEXSH	CGEIDSHU	CGFINDSH
310	.	2.00000	0.117034	0.761309E-01	0.110763	-5.35893	45.4896
311	.	2.00000	0.200652	0.162260	0.411016	104.840	153.308
316	.	2.00000	0.546600E-01	0.434377E-01	0.100187	83.2904	130.644
318	.	2.00000	0.100344	0.711123E-01	0.840300E-01	-16.2580	18.1651
320	.	2.00000	0.356644E-01	0.484735E-01	0.881842E-01	147.261	81.9223
322	.	2.00000	0.447012E-01	0.419446E-01	0.705765E-01	57.8851	68.2613
325	.	2.00000	0.109349	0.748867E-01	0.123646	13.0750	65.1104
326	.	2.00000	0.332985E-01	0.375004E-01	0.486031E-01	45.9619	29.6069
327	.	2.00000	0.185361	0.384674	0.309587	67.0183	-19.5197
328	.	2.00000	0.174212	0.108541	0.231312	32.7759	113.110
331	.	2.00000	0.670919E-01	0.293743E-01	0.872160E-01	29.9948	196.913
333	.	2.00000	0.137100	0.965911E-01	0.109767	-41.3326	13.6404
335	.	2.00000	0.260250	0.195843	0.308202	18.4256	57.3720
345	.	2.00000	0.197902	0.941862E-01	0.178402	-9.85352	89.4139
350	.	2.00000	0.182840	0.146080	0.224184	22.6122	53.4666
2	.	3.00000	0.162132E-01	0.124556E-01	0.205598E-01	26.8088	65.0648
5	.	3.00000	0.532840E-01	0.216081E-01	0.955815E-01	79.3811	342.342
6	.	3.00000	0.150177E-01	0.786289E-02	0.981452E-02	-34.6472	24.8207
7	.	3.00000	0.849706E-02	0.505823E-02	0.688577E-02	-18.9629	36.1301
8	.	3.00000	0.259486E-01	0.268893E-01	0.220267E-01	-15.1144	-18.0839
10	.	3.00000	0.947275E-02	0.591491E-02	0.596507E-02	-37.0292	0.847912
13	.	3.00000	0.212310E-01	0.101418E-01	0.182334E-01	-14.1193	79.7836
18	.	3.00000	0.121729E-01	0.745579E-02	0.100664E-01	-17.3043	35.0150
19	.	3.00000	0.456590E-01	0.202702E-01	0.456581E-01	-0.183582E-02	125.247
22	.	3.00000	0.264508E-01	0.370115E-01	0.201625E-01	-23.7737	-45.5239
23	.	3.00000	0.116773	0.895398E-01	0.206054	76.4563	130.126
24	.	3.00000	0.448566E-01	0.280082E-01	0.367238E-01	-18.1307	31.1182
25	.	3.00000	0.610502E-01	0.222923E-01	0.306384E-01	-49.8145	37.4394
27	.	3.00000	0.396351E-01	0.177272E-01	0.262873E-01	-33.6768	48.2875
29	.	3.00000	0.617399E-02	0.182834E-02	0.240156E-02	-61.1019	31.3522
31	.	3.00000	0.968326E-01	0.767344E-01	0.548855E-01	-43.3192	-28.4734
32	.	3.00000	0.109075E-01	0.817676E-02	0.903929E-02	-17.1427	10.5485
34	.	3.00000	0.403838E-01	0.160474E-01	0.274636E-01	-31.9935	71.1404
38	.	3.00000	0.155699E-01	0.455168E-02	0.581481E-02	-62.6535	27.7508
40	.	3.00000	0.595527E-01	0.259743E-01	0.435060E-01	-26.9453	67.4964
41	.	3.00000	0.327213E-01	0.220959E-01	0.289635E-01	-11.4841	31.0812
42	.	3.00000	0.404142E-01	0.152893E-01	0.293379E-01	-27.4070	91.8856
44	.	3.00000	0.306949E-01	0.287777E-01	0.346383E-01	12.8471	20.3649
45	.	3.00000	0.150874E-01	0.953657E-02	0.940845E-02	-37.6404	-1.34342
51	.	3.00000	0.279804E-01	0.307663E-01	0.203207E-01	-27.3753	-33.9514
54	.	3.00000	0.227232E-01	0.396281E-01	0.387565E-01	70.5591	-2.19957
55	.	3.00000	0.215491E-01	0.188982E-01	0.438925E-01	103.686	132.258
59	.	3.00000	0.116832E-01	0.618733E-02	0.518944E-02	-55.5822	-36.6162
60	.	3.00000	0.133219E-01	0.456411E-02	0.131340E-01	-1.41010	187.768
61	.	3.00000	0.241831E-01	0.181970E-01	0.151232E-01	-37.4637	-16.8915
62	.	3.00000	0.334021E-01	0.131019E-01	0.215303E-01	-35.5423	64.3294
63	.	3.00000	0.877047E-02	0.254206E-02	0.169511E-02	-80.6725	-33.3175
64	.	3.00000	0.168887E-01	0.101646E-01	0.139510E-01	-17.3947	37.2500
66	.	3.00000	0.203787E-01	0.104842E-01	0.124423E-01	-38.9446	18.6763
67	.	3.00000	0.666005E-02	0.498965E-02	0.268013E-02	-59.7581	-46.2863

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ID NO.		IDT	UGSH	ASH	INDEXSH	CGEIDSHU	CGEINDSH
68	.	3.00000	0.202786E-01	0.958360E-02	0.111059E-01	-45.2332	15.8847
73	.	3.00000	0.436504E-01	0.272874E-01	0.557906E-01	27.8124	104.456
76	.	3.00000	0.230841E-01	0.120489E-01	0.101790E-01	-55.9046	-15.5189
77	.	3.00000	0.235738E-01	0.691816E-02	0.111003E-01	-52.9127	60.4508
78	.	3.00000	0.120192E-01	0.706318E-02	0.154065E-01	28.1820	118.123
79	.	3.00000	0.571617E-01	0.583231E-01	0.613269E-01	7.28655	-10.2399
81	.	3.00000	0.172675E-01	0.705107E-02	0.111124E-01	-35.6455	57.5993
83	.	3.00000	0.173569E-01	0.101817E-01	0.178756E-01	2.98834	75.5652
84	.	3.00000	0.149034E-01	0.116656E-01	0.149962E-01	0.622749	28.5501
85	.	3.00000	0.979619E-02	0.299216E-02	0.647663E-02	-33.8863	116.454
87	.	3.00000	0.157415E-01	0.671254E-02	0.257502E-01	63.5818	283.613
89	.	3.00000	0.164723E-01	0.131925E-01	0.651564E-02	-60.4449	-50.6111
90	.	3.00000	0.216760E-01	0.673377E-02	0.258588E-01	19.2969	284.017
93	.	3.00000	0.196621E-01	0.118987E-01	0.260480E-01	32.4782	118.915
94	.	3.00000	0.248890E-01	0.211388E-01	0.181299E-01	-27.1570	-14.2342
96	.	3.00000	0.134452E-01	0.630803E-02	0.462545E-02	-65.5978	-26.6736
97	.	3.00000	0.201017E-01	0.117412E-01	0.192056E-01	-4.45784	63.5735
102	.	3.00000	0.204859E-01	0.109220E-01	0.971720E-02	-52.5664	-11.0307
103	.	3.00000	0.453677E-01	0.269657E-01	0.213431E-01	-52.9552	-20.8506
104	.	3.00000	0.338953E-01	0.167633E-01	0.313141E-01	-7.61516	86.8014
105	.	3.00000	0.470099E-01	0.266438E-01	0.393383E-01	-16.3192	47.6451
109	.	3.00000	0.192868E-01	0.562900E-02	0.841351E-02	-56.3769	49.4671
112	.	3.00000	0.350622E-01	0.253533E-01	0.337174E-01	-3.83542	32.9903
113	.	3.00000	0.509574E-01	0.223156E-01	0.493686E-01	-3.11779	121.229
114	.	3.00000	0.176392E-01	0.355293E-01	0.143321E-01	-18.7486	-59.6612
120	.	3.00000	0.178394E-01	0.962804E-02	0.125874E-01	-29.4405	30.7365
121	.	3.00000	0.348460E-02	0.439733E-02	0.124453E-02	-64.2848	-71.6980
122	.	3.00000	0.132129E-01	0.499815E-02	0.107169E-01	-18.8905	114.418
124	.	3.00000	0.821007E-01	0.354893E-01	0.962903E-01	17.2831	171.322
125	.	3.00000	0.167815E-01	0.904100E-02	0.189149E-01	12.7131	109.213
127	.	3.00000	0.492312E-01	0.265037E-01	0.318247E-01	-35.3566	20.0761
128	.	3.00000	0.156092E-01	2.07743	0.992271E-02	-36.4305	-99.5224
136	.	3.00000	0.175499E-01	0.364928E-01	0.101840E-01	-41.9708	-72.0930
139	.	3.00000	0.659751E-02	0.422175E-02	0.446238E-02	-32.3627	5.69963
140	.	3.00000	0.165384E-01	0.683084E-02	0.819184E-02	-50.4679	19.9243
144	.	3.00000	0.175266E-01	0.910025E-02	0.108939E-01	-37.8436	19.7101
145	.	3.00000	0.121800E-01	0.795975E-02	0.760903E-02	-37.5286	-4.40614
149	.	3.00000	0.155431E-01	0.564143E-02	0.873182E-02	-43.8219	54.7801
150	.	3.00000	0.222550E-01	0.500096E-01	0.278477E-01	25.1302	-44.3152
152	.	3.00000	0.272800E-01	0.116445E-01	0.197291E-01	-27.6790	69.4288
153	.	3.00000	0.135703E-01	0.655146E-02	0.984455E-02	-27.4551	50.2648
154	.	3.00000	0.118475E-01	0.141335E-01	0.127602E-01	7.70235	-9.71679
155	.	3.00000	0.341148E-01	0.427355E-01	0.600095E-01	75.5442	40.4207
181	.	3.00000	0.182915E-01	0.783544E-02	0.226464E-01	23.8088	189.026
182	.	3.00000	0.279000E-01	0.129343E-01	0.261360E-01	-6.32272	102.068
183	.	3.00000	0.163901E-01	0.239735E-01	0.149189E-01	-8.97711	-37.7697
189	.	3.00000	0.260791E-01	0.165891E-01	0.264029E-01	1.24149	59.1580
190	.	3.00000	0.320583E-01	0.169176E-01	0.226518E-01	-29.3420	33.8948
199	.	3.00000	0.614540E-02	0.192425E-01	0.482546E-02	-21.4786	-74.9229
202	.	3.00000	0.743471E-01	0.705687E-01	0.614869E-01	-17.2975	-12.8694

ID NO.		IDT	UGSH	ASH	INDEXSH	CGEIDSHU	CGEINDSH
205	.	3.00000	0.160431E-01	0.118840E-01	0.103296E-01	-42.7503	-13.0797
207	.	3.00000	0.110524E-01	0.492719E-02	0.618628E-02	-44.0279	25.5539
208	.	3.00000	0.162132E-01	0.114284E-01	0.952026E-02	-41.2809	-16.6966
209	.	3.00000	0.263054E-01	0.201640E-01	0.195525E-01	-3.70801	-3.03298
213	.	3.00000	0.455803E-01	0.132681E-01	0.373863E-01	-17.9771	181.775
214	.	3.00000	0.189241E-01	0.812963E-02	0.182582E-01	-3.51856	124.588
219	.	3.00000	0.741612E-01	0.287714E-01	0.545763E-01	-26.4085	89.6894
220	.	3.00000	0.822902E-02	0.536071E-02	0.202237E-02	-75.4239	-62.2742
221	.	3.00000	0.929584E-02	0.275338E-02	0.836524E-02	-10.0109	203.817
223	.	3.00000	0.414810E-01	0.403132E-01	0.326150E-01	-21.3737	-19.0961
225	.	3.00000	0.123587E-01	0.479667E-02	0.117803E-01	-4.68040	145.593
228	.	3.00000	0.513398E-02	0.140601E-01	0.737271E-02	43.6062	-47.5628
229	.	3.00000	0.313096E-01	0.189026E-01	0.183673E-01	-41.3364	-2.83197
231	.	3.00000	0.201464E-01	0.167415E-01	0.838563E-01	316.236	400.890
233	.	3.00000	0.189258E-01	0.552438E-02	0.113642E-01	-39.9543	105.709
234	.	3.00000	0.114599E-01	0.787791E-02	0.115018E-01	0.365734	46.0005
236	.	3.00000	0.242385E-01	0.116589E-01	0.262043E-01	8.10986	124.758
240	.	3.00000	0.289258E-01	0.159682E-01	0.207602E-01	-28.2293	30.0099
244	.	3.00000	0.119995E-01	0.231456E-01	0.132832E-01	10.6979	-42.6102
248	.	3.00000	0.555892E-01	0.288901E-01	0.545219E-01	-1.92001	88.7216
252	.	3.00000	0.200159E-01	0.121413E-01	0.289402E-01	44.5860	138.361
259	.	3.00000	0.850778E-02	0.513032E-02	0.838916E-02	-1.39431	63.5210
270	.	3.00000	0.153841E-01	0.449781E-02	0.125216E-01	-18.6068	178.392
271	.	3.00000	0.968540E-02	0.560828E-02	0.802027E-02	-17.1922	43.0075
272	.	3.00000	0.140510E-01	0.596701E-02	0.127449E-01	-9.29511	113.590
274	.	3.00000	0.477301E-02	0.775050E-02	0.214978E-02	-54.9597	-72.2627
275	.	3.00000	0.504517E-01	0.195254E-01	0.323520E-01	-35.8753	65.6916
276	.	3.00000	0.307824E-01	0.126497E-01	0.289833E-01	-5.84458	129.122
278	.	3.00000	0.336326E-01	0.129816E-01	0.268822E-01	-20.0712	107.079
281	.	3.00000	0.414167E-01	0.213165E-01	0.604355E-01	45.9206	183.516
295	.	3.00000	0.156986E-01	0.923647E-02	0.100140E-01	-36.2105	8.41837
300	.	3.00000	0.439185E-01	0.240075E-01	0.621054E-01	41.4105	158.692
304	.	3.00000	0.136150E-01	0.111152E-01	0.170697E-01	25.3746	53.5714
313	.	3.00000	0.294833E-01	0.601504E-01	0.329642E-01	11.8063	-45.1971
315	.	3.00000	0.382841E-01	0.451023E-01	0.413999E-01	8.13856	-8.20890
317	.	3.00000	0.274729E-01	0.185657E-01	0.283839E-01	3.31583	52.8839
319	.	3.00000	0.781980E-02	0.464077E-02	0.980823E-02	25.4281	111.349
321	.	3.00000	0.100939	0.475777E-01	0.389527E-01	-61.4097	-18.1283
330	.	3.00000	0.153269E-01	0.191447E-01	0.183317E-01	19.6050	-4.24664
332	.	3.00000	0.223622E-01	0.117638E-01	0.973732E-02	-56.4564	-17.2266
337	.	3.00000	0.304465E-01	0.117744E-01	0.126078E-01	-58.5903	7.07798
338	.	3.00000	0.350944E-01	0.108323E-01	0.300491E-01	-14.3764	177.403
339	.	3.00000	0.258003E-01	0.208768E-01	0.259466E-01	0.566769	24.2841
341	.	3.00000	0.685662E-02	0.318017E-02	0.402873E-02	-41.2431	26.6830
342	.	3.00000	0.200945E-01	0.855248E-02	0.152627E-01	-24.0456	78.4591
343	.	3.00000	0.449335E-01	0.220442E-01	0.311222E-01	-30.7372	41.1810
351	.	3.00000	0.423852E-01	0.155984E-01	0.505177E-01	19.1870	223.865
352	.	3.00000	0.208272E-01	0.435781E-01	0.130317E-01	-37.4292	-70.0957
355	.	3.00000	0.351998E-01	0.104614E-01	0.398701E-01	13.2679	281.116
133	.	5.00000	1.61382	0.922744	0.381512	-76.3597	-58.6546

ID NO.		IDT	UGSH	ASH	INDEXSH	CGFIDSHU	CGFINDSH
334	.	5.00000	0.775541	0.454896	0.198505	-74.4044	-56.3626
255	.	5.00000	0.513296	0.641965	0.392323	-23.5682	-38.8872
235	.	5.00000	0.815146	0.570039	0.237164	-70.9053	-58.3951
340	.	5.00000	0.761221	0.489986	0.208798	-73.2729	-57.3871
299	.	5.00000	0.624372	0.324552	0.196893	-68.4655	-39.3340
314	.	5.00000	0.470371	0.522420	0.976099E-01	-79.2483	-81.3158
118	.	5.00000	0.831011	0.644508	0.186492	-78.8321	-71.0645
20	.	5.00000	0.781335	0.468854	0.288881	-63.0273	-38.3857
348	.	5.00000	0.809841	0.492079	0.475586	-41.2742	-3.35169
15	.	5.00000	0.671720	0.653581	0.545856	-18.7375	-16.4823
12	.	5.00000	1.15969	0.880602	0.515534	-55.5454	-41.4567
286	.	5.00000	0.810164	0.575093	0.231294	-71.4509	-59.7814
195	.	5.00000	0.502070	0.292407	0.364379	-27.4247	24.6136
349	.	5.00000	0.865017	0.387294	0.175629	-79.6965	-54.6524
226	.	5.00000	0.735006	0.697218	0.369078	-49.7856	-47.0641
243	.	5.00000	0.379218	0.230128	0.973512E-01	-74.3284	-57.6969
294	.	5.00000	1.00691	0.837347	0.362870	-63.9621	-56.6643
302	.	5.00000	1.83352	1.07400	1.29356	-29.4493	20.4430
323	.	5.00000	0.659710	0.553670	0.198231	-69.9518	-64.1969
49	.	5.00000	0.862708	0.631967	0.409222	-52.5268	-35.2462
263	.	5.00000	0.450319	0.516961	0.553538	22.9211	7.07531
329	.	5.00000	1.00941	0.594937	0.346174	-65.6712	-41.6134
201	.	5.00000	0.576195	0.538161	0.356139	-38.1913	-33.8229
204	.	5.00000	0.294334	0.717097	0.431254	46.5182	-39.8612
222	.	5.00000	0.856283	0.484722	0.259328	-69.7147	-46.4997
193	.	5.00000	0.907967	0.539476	0.525429	-42.1313	-2.60352
110	.	5.00000	0.935972	0.460061	0.248141	-73.4884	-46.0634
198	.	5.00000	0.411083	0.254654	0.248157	-39.6332	-2.55129
245	.	5.00000	1.03527	0.937403	0.614022	-40.6399	-34.4975
53	.	6.00000	0.684920	0.319170	0.216866	-68.3371	-32.0531
251	.	6.00000	0.499027	0.268629	0.126397	-74.6712	-52.9474
312	.	6.00000	1.01906	0.470824	0.378004	-62.9068	-19.7144
353	.	6.00000	0.798084	0.391975	0.191820	-75.9650	-51.0633
111	.	6.00000	0.732097	0.349354	0.277678	-62.0708	-20.5165
1	.	6.00000	0.193272	0.110383	0.302467E-01	-84.3502	-72.5983
269	.	6.00000	1.21540	0.573077	0.478303	-60.6463	-16.5376
296	.	6.00000	0.329427	0.207212	0.105980	-67.6290	-48.8543
191	.	6.00000	0.623014	0.337022	0.268963	-56.8287	-20.1941
258	.	6.00000	0.505051	0.268502	0.839147E-01	-83.3849	-69.7470
336	.	6.00000	0.992193	0.412139	0.172771	-82.5670	-58.0795
36	.	6.00000	0.739067	0.426985	0.560865	-24.1118	31.3549
305	.	6.00000	0.554063	0.432727	0.672696	2.84872	55.4549
346	.	6.00000	0.761325	0.477455	0.411148	-45.9957	-13.8876
287	.	6.00000	0.836490	0.564552	0.335023	-59.9490	-40.6569
290	.	6.00000	0.245868	0.141368	0.609299E-01	-75.2185	-56.8997
246	.	6.00000	0.170626	0.134413	0.635050E-01	-62.7811	-52.7538
107	.	6.00000	0.245756	0.210172	0.955403E-01	-61.5927	-54.5418
		1	2	3	4	5	6

Appendix D

Comparison of Grant Shares Based on Updated Municipal Assistance Grant Formula With Existing Grant Shares for Individual Alberta Municipalities

Legend:

ID NO.	=	Identification number: see Appendix H for conversion from municipality name to ID No.
IDT	=	Municipality type: 1 = City 2 = Town 3 = Village 5 = County 6 = Municipal District
USGH	=	Percentage share of 1977 unconditional grants for all municipalities.
ASH	=	Percentage share of total grants for all municipalities.
MAG77SH	=	Percentage share of funds based on updated Municipal Assistance Grant Formula.
CGEMAGSU	=	Percentage change in MAG77SH from UGSH.
CGEMAGSH	=	Percentage change in MAG77SH from ASH.

ID NO.		IDT	UGSH	ASH	MAG77SH	CGEMAGSU	CGEMAGSH
46	.	1.00000	19.0474	23.0685	5.22715	-72.5572	-77.3407
48	.	1.00000	0.506727	0.347312	0.810767	60.0008	133.440
92	.	1.00000	0.155756	0.165162	0.327430	110.220	98.2483
98	.	1.00000	17.5644	27.8270	5.13280	-70.8104	-81.5546
132	.	1.00000	0.876456	0.931543	0.194332	-77.8275	-79.1387
203	.	1.00000	1.79360	2.11307	0.520643	-70.9722	-75.3609
217	.	1.00000	1.45531	3.81767	2.35183	61.6035	-38.3962
262	.	1.00000	1.61740	1.16826	2.96713	83.4507	153.977
347	.	1.00000	0.356074	0.426262	0.763428E-01	-78.5599	-82.0902
3	.	2.00000	0.114715	0.730613E-01	0.155355E-01	-86.4573	-78.7364
11	.	2.00000	0.120692	0.577242E-01	0.395794E-01	-67.2063	-31.4336
14	.	2.00000	0.105026	0.101943	0.324276E-01	-69.1241	-68.1906
16	.	2.00000	0.270441E-01	0.170445E-01	0.380578E-01	40.7249	123.285
17	.	2.00000	0.615899E-01	0.443004E-01	0.544267E-01	-11.6304	22.8584
21	.	2.00000	0.820864E-01	0.465862E-01	0.119247	45.2697	155.970
30	.	2.00000	0.100149	0.372478E-01	0.141161	40.9503	278.977
33	.	2.00000	0.234101	0.928806E-01	0.229750	-1.65874	147.360
35	.	2.00000	0.191004	0.126287	0.100502	-47.3325	-20.4182
39	.	2.00000	0.691202E-01	0.287857E-01	0.637446E-01	-7.77713	121.445
43	.	2.00000	0.319343	0.317723	0.280263	-12.2376	-11.7901
47	.	2.00000	0.877690E-01	0.532853E-01	0.866335E-01	-1.29377	62.5841
50	.	2.00000	0.952314E-01	0.815729E-01	0.433254E-01	-54.5952	-46.6875
52	.	2.00000	0.200749	0.998108E-01	0.188146	-6.27811	86.5020
56	.	2.00000	0.837287E-01	0.474588E-01	0.883976E-01	5.57613	66.2617
58	.	2.00000	0.672814E-01	0.876968E-01	0.503385E-01	-25.1821	-42.5994
65	.	2.00000	0.373222	0.297491	0.238638	-36.0601	-19.7831
69	.	2.00000	0.258963	0.761697E-01	0.309473	19.5048	306.294
70	.	2.00000	0.116874	0.367346E-01	0.167142E-01	-65.6989	-54.5000
71	.	2.00000	0.118584	0.605786E-01	0.746506E-01	-37.0481	23.2292
72	.	2.00000	0.128659	0.516570E-01	0.220868	71.6700	327.566
75	.	2.00000	0.624905E-01	0.295947E-01	0.104591	67.3712	253.411
82	.	2.00000	0.461218E-01	0.185704E-01	0.418132E-01	-9.34172	125.160
86	.	2.00000	0.165999	0.152328	0.307373E-01	-81.4835	-79.8216
88	.	2.00000	0.133739	0.108464	0.177883	33.0079	64.0020
91	.	2.00000	0.379743	0.202574	0.358704	-5.55282	76.2032
95	.	2.00000	0.404071E-01	0.334671E-01	0.533324E-01	31.9879	59.5578
100	.	2.00000	0.266273	0.138306	0.199692	-25.0050	44.3037
101	.	2.00000	0.558603E-01	0.301489E-01	0.631467E-01	13.0427	109.449
106	.	2.00000	0.113916	0.628801E-01	0.122768	7.77092	95.2420
108	.	2.00000	0.701530E-01	0.838867E-01	0.646331E-01	-7.86541	-22.9519
115	.	2.00000	0.207897	0.963161E-01	0.221759	6.66733	130.240
116	.	2.00000	2.42359	1.17428	0.170378	-92.9700	-65.4906
117	.	2.00000	0.408479	0.223656	0.972384E-01	-76.1950	-56.5233
119	.	2.00000	0.826868E-01	0.989337E-01	0.180042E-01	-78.2260	-81.6017
126	.	2.00000	0.355250E-01	0.158465E-01	0.358752E-01	0.985718	126.393
130	.	2.00000	0.243434	0.115397	0.165389	-32.0600	43.3222
131	.	2.00000	0.258196	0.253459	0.448231	73.6006	76.5452

ID NO.		IDT	UGSH	ASH	MAG77SH	CGLMAGSU	CGEMAGSH
135	.	2.00000	0.343939E-01	0.143802E-01	0.619910E-01	10.2385	331.087
137	.	2.00000	0.135[illegible]	0.632838E-01	0.125871	-6.98454	98.8985
141	.	2.00000	0.167325	0.106064	0.990927E-01	-40.7784	-0.57257
143	.	2.00000	0.481018E-01	0.451351E-01	0.386232E-01	-19.7054	-14.4276
146	.	2.00000	0.931872E-01	0.164147	0.545185E-01	-41.4[illegible]57	-65.7866
147	.	2.00000	0.191587	0.168860	0.714711E-01	-6[illegible].6952	-57.6744
148	.	2.00000	0.205893	0.796938E-01	0.142026	-31.0197	78.2145
151	.	2.00000	0.291974	0.193091	0.733625E-01	-74.8736	-62.0063
180	.	2.00000	0.155451	0.136038	0.136749	-12.0306	0.522804
184	.	2.00000	0.118602E-01	0.239668E-01	0.269394E-01	127.142	12.4029
188	.	2.00000	0.452515E-01	0.235704E-01	0.490114E-01	8.30870	107.936
192	.	2.00000	0.107601	0.143512	0.153781	42.9184	7.15551
194	.	2.00000	0.197734	0.125777	0.290682	47.0064	131.108
197	.	2.00000	0.523226E-01	0.577791E-01	0.775165E-01	48.1510	34.1600
200	.	2.00000	0.486945	0.277286	0.348961	-28.3366	25.8490
211	.	2.00000	0.137361	0.444877E-01	0.148354	8.00285	233.472
212	.	2.00000	0.909624E-01	0.107476	0.849518E-01	-6.60778	-20.9575
215	.	2.00000	0.767005E-01	0.777956E-01	0.477130E-01	-37.7932	-38.6688
216	.	2.00000	0.117579	0.547782E-01	0.175138	48.9532	219.723
218	.	2.00000	0.413577E-01	0.723345E-01	0.108082E-01	-73.8666	-85.1606
224	.	2.00000	0.171569	0.991526E-01	0.789372E-01	-5[illegible].[illegible]910	-20.4202
227	.	2.00000	0.403445E-01	0.207001E-01	0.579047E-01	43.5255	179.731
232	.	2.00000	0.7744[illegible]3E-01	0.337574E-01	0.792570E-01	2.34127	134.784
238	.	2.00000	0.160213	0.856259E-01	0.582524E-01	-63.6406	-31.9687
239	.	2.00000	0.139171	0.245661	0.113949	-13.1232	-53.6153
241	.	2.00000	0.709053E-01	0.440593E-01	0.674244E-01	-4.90924	53.0309
247	.	2.00000	0.175854	0.220409	0.514649E-01	-70.7344	-76.6503
249	.	2.00000	0.418933E-01	0.471198E-01	0.127331E-01	-69.6063	-72.9773
250	.	2.00000	0.349320	0.157415	0.407326	16.6055	158.759
254	.	2.00000	0.313189	0.264537	0.299626	-4.33059	13.2641
257	.	2.00000	0.674601E-01	0.645931E-01	0.354075E-01	-47.5134	-45.1836
260	.	2.00000	0.396279E-01	0.254874E-01	0.806298E-01	103.467	216.351
261	.	2.00000	0.209233	0.798094E-01	0.264532	26.4292	231.455
264	.	2.00000	0.136146	0.689992E-01	0.131492	-3.31865	90.5699
265	.	2.00000	0.107[illegible]	0.828918E-01	0.641913E-01	-40.5141	-22.5601
266	.	2.00000	0.102242	0.482469E-01	0.124854	22.1162	158.781
269	.	2.00000	0.174318	0.119022	0.249293	43.0107	109.451
280	.	2.00000	0.917147E-01	0.404673E-01	0.973652E-01	6.16093	140.[illegible]02
284	.	2.00000	0.124143	0.118762	0.253820	104.456	113.721
285	.	2.00000	0.102787	0.777225E-01	0.983333E-01	-4.13613	26.7757
289	.	2.00000	0.559999E-01	0.542719E-01	0.657389E-01	-23.5593	21.1510
291	.	2.00000	0.312590	0.219117	0.224505	-25.1790	2.45905
292	.	1.00000	1.12129	0.945140	2.11570	68.6850	123.849
293	.	2.00000	0.210447	0.216799	0.169264	-19.5692	-21.9043
297	.	2.00000	0.2[illegible]2061E-01	0.153047E-01	0.411785E-01	41.0184	169.125
298	.	2.00000	0.307136	0.291016	0.157575	-43.0454	-34.0206
301	.	2.00000	0.102967	0.148375	0.119664	15.1930	-19.3504
303	.	2.00000	0.105546	0.446669E-01	0.363421E-01	-[illegible].72764	115.673
307	.	2.00000	0.104540	0.465614E-01	0.994253E-01	-4.89234	104.742
309	.	2.00000	0.911321E-01	0.816659E-01	0.187653	105.919	179.756

ID NO.		IDT	UGSH	ASH	MAG77SH	CGEMAGSU	CGEMAGSH
310	.	2.00000	0.117034	0.761309E-01	0.729043E-01	-37.7069	-4.23820
311	.	2.00000	0.200652	0.162260	0.148087	-26.1973	-8.73464
316	.	2.00000	0.546600E-01	0.434377E-01	0.707698E-01	29.4728	62.9228
318	.	2.00000	0.100344	0.711123E-01	0.742651E-01	-25.9895	4.43344
320	.	2.00000	0.356644E-01	0.434735E-01	0.134263E-01	-62.3537	-7[illegible].3017
322	.	2.00000	0.447012E-01	0.419446E-01	0.654559E-01	46.4298	56.0533
325	.	2.00000	0.109349	0.748867E-01	0.445093E-01	-59.2959	-40.5645
326	.	2.00000	0.332935E-01	0.375004E-01	0.294372E-01	-11.5961	-21.5017
327	.	2.00000	0.185361	0.384674	0.637846E-01	-65.5890	-83.4185
328	.	2.00000	0.174212	0.108541	0.277627	59.3612	155.780
331	.	2.00000	0.670919E-01	0.293743E-01	0.922954E-01	37.5655	214.205
333	.	2.00000	0.187100	0.965911E-01	0.740895E-01	-60.4011	-23.2957
335	.	2.00000	0.260250	0.195843	0.299129	14.9393	52.7391
345	.	2.00000	0.197902	0.941862E-01	0.196944	-0.484216	109.101
350	.	2.00000	0.182840	0.146080	0.991395E-01	-45.7779	-32.1333
2	.	3.00000	0.162132E-01	0.124556E-01	0.226925E-01	39.9630	82.1872
5	.	3.00000	0.532840E-01	0.216081E-01	0.999352E-01	87.5519	362.490
6	.	3.00000	0.150177E-01	0.786289E-02	0.739323E-02	-50.7700	-5.97315
7	.	3.00000	0.849706E-02	0.505823E-02	0.135849E-01	59.8779	168.571
8	.	3.00000	0.259466E-01	0.268893E-01	0.171170E-01	-34.0350	-36.3426
10	.	3.00000	0.947275E-02	0.591491E-02	0.768764E-02	-18.8447	29.9706
13	.	3.00000	0.212310E-01	0.101418E-01	0.331468E-01	56.1242	226.832
18	.	3.00000	0.121729E-01	0.745579E-02	0.216734E-01	78.0463	190.692
19	.	3.00000	0.456590E-01	0.202702E-01	0.862603E-01	88.9230	325.552
22	.	3.00000	0.264508E-01	0.370115E-01	0.532676E-02	-79.8616	-85.6078
23	.	3.00000	0.116773	0.895398E-01	0.237064	103.012	164.758
24	.	3.00000	0.448566E-01	0.280082E-01	0.826294E-01	84.2078	195.019
25	.	3.00000	0.610502E-01	0.222923E-01	0.556964E-01	-8.76951	149.846
27	.	3.00000	0.396351E-01	0.177272E-01	0.646974E-01	63.2326	264.961
29	.	3.00000	0.617399E-02	0.182834E-02	0.998153E-02	61.6705	445.935
31	.	3.00000	0.968326E-01	0.767344E-01	0.120178	24.1094	56.6159
32	.	3.00000	0.109095E-01	0.817676E-02	0.671032E-02	-38.4909	-17.9343
34	.	3.00000	0.403838E-01	0.160474E-01	0.702493E-01	73.9541	337.760
38	.	3.00000	0.155659E-01	0.455168E-02	0.143585E-01	-7.78059	215.455
40	.	3.00000	0.595527E-01	0.259743E-01	0.472935E-01	-20.5654	82.0782
41	.	3.00000	0.327213E-01	0.220959E-01	0.630537E-02	-80.7301	-71.4635
42	.	3.00000	0.494142E-01	0.152893E-01	0.525593E-01	30.7939	245.728
44	.	3.00000	0.306949E-01	0.287777E-01	0.656733E-01	113.955	128.269
45	.	3.00000	0.150874E-01	0.953657E-02	0.424347E-01	181.259	344.968
51	.	3.00000	0.279804E-01	0.307663E-01	0.258378E-01	-7.63772	-16.0192
54	.	3.00000	0.227232E-01	0.396281E-01	0.410421E-01	80.6176	3.56808
55	.	3.00000	0.215491E-01	0.188982E-01	0.750359E-01	248.708	297.653
59	.	3.00000	0.115932E-01	0.818733E-02	0.183663E-01	57.2019	124.326
60	.	3.00000	0.133219E-01	0.456411E-02	0.188804E-01	41.7243	313.670
61	.	3.00000	0.241631E-01	0.181970E-01	0.164141E-01	-32.1259	-9.79769
62	.	3.00000	0.334021E-01	0.131019E-01	0.226321E-01	-32.2435	72.7393
63	.	3.00000	0.877047E-02	0.254206E-02	0.467065E-03	-94.6746	-81.6266
64	.	3.00000	0.168887E-01	0.101646E-01	0.407911E-01	141.529	301.304
66	.	3.00000	0.203707E-01	0.104842E-01	0.327310E-01	60.6138	212.193
67	.	3.00000	0.666005E-02	0.498965E-02	0.104533E-02	-84.3044	-79.0500

ID NO.		IDT	UGSH	ASH	MAG77SH	CGEMAGSU	CGEMAGSH
68	.	3.00000	0.202786E-01	0.958360E-02	0.365651E-01	80.3141	281.539
73	.	3.00000	0.436564E-01	0.272874E-01	0.381558E-01	-12.5679	39.8291
76	.	3.00000	0.230141E-01	0.120489E-01	0.320273E-02	-86.1258	-73.4189
77	.	3.00000	0.235738E-01	0.691816E-02	0.364680E-01	54.6974	427.135
78	.	3.00000	0.120192E-01	0.706318E-02	0.138779E-01	15.4647	96.4625
79	.	3.00000	0.571617E-01	0.683231E-01	0.697907E-01	22.0933	2.14787
81	.	3.00000	0.172675E-01	0.705107E-02	0.301898E-01	74.8357	328.159
83	.	3.00000	0.173569E-01	0.101817E-01	0.538340E-01	210.159	428.731
84	.	3.00000	0.149034E-01	0.116656E-01	0.252437E-02	-83.0617	-78.3606
85	.	3.00000	0.979619E-02	0.299216E-02	0.986652E-02	0.717631	229.746
87	.	3.00000	0.157415E-01	0.671254E-02	0.161607E-01	2.66304	140.753
89	.	3.00000	0.164723E-01	0.131925E-01	0.110769E-01	-32.7542	-16.0362
90	.	3.00000	0.216760E-01	0.673377E-02	0.316272E-01	43.9085	369.679
93	.	3.00000	0.196621E-01	0.118987E-01	0.367714E-01	87.0170	209.037
94	.	3.00000	0.249890E-01	0.211388E-01	0.235719E-01	-5.29169	11.5102
96	.	3.00000	0.134452E-01	0.630803E-02	0.163508E-01	21.6110	159.297
97	.	3.00000	0.201017E-01	0.117412E-01	0.418723E-01	108.302	256.625
102	.	3.00000	0.204859E-01	0.109220E-01	0.202216E-01	-1.29024	85.1458
103	.	3.00000	0.453677E-01	0.269657E-01	0.381059E-01	-16.0065	41.3128
104	.	3.00000	0.338953E-01	0.167633E-01	0.497530E-01	46.7843	196.797
105	.	3.00000	0.470699E-01	0.266438E-01	0.634782E-01	35.0314	138.247
109	.	3.00000	0.192868E-01	0.562900E-02	0.201809E-01	4.63552	258.516
112	.	3.00000	0.350622E-01	0.253533E-01	0.295153E-01	-15.8203	16.4159
113	.	3.00000	0.509574E-01	0.223156E-01	0.586332E-01	15.0633	162.746
114	.	3.00000	0.176392E-01	0.355293E-01	0.310283E-01	75.9050	-12.6685
120	.	3.00000	0.178394E-01	0.962804E-02	0.155771E-01	-12.6815	61.7886
121	.	3.00000	0.348460E-02	0.439733E-02	0.265206E-02	-23.8920	-39.6894
122	.	3.00000	0.132129E-01	0.499815E-02	0.140591E-01	6.40430	181.286
124	.	3.00000	0.821007E-01	0.354893E-01	0.138216	68.3487	289.457
125	.	3.00000	0.167615E-01	0.904100E-02	0.141444E-01	-15.7140	56.4477
127	.	3.00000	0.492312E-01	0.265037E-01	0.448550E-01	-8.88892	69.2404
128	.	3.00000	0.156092E-01	2.07743	0.164269E-01	5.23825	-99.2093
136	.	3.00000	0.175499E-01	0.364928E-01	0.153696E-01	-12.4232	-57.8831
139	.	3.00000	0.659751E-02	0.422175E-02	0.102904E-01	55.9733	143.746
140	.	3.00000	0.165384E-01	0.683084E-02	0.172884E-01	4.53434	153.093
144	.	3.00000	0.175266E-01	0.910025E-02	0.280543E-01	60.0663	208.280
145	.	3.00000	0.121800E-01	0.795975E-02	0.120720E-01	-0.886762	51.6632
149	.	3.00000	0.155431E-01	0.564143E-02	0.312800E-01	101.246	454.469
150	.	3.00000	0.222550E-01	0.500096E-01	0.403778E-01	81.4324	-19.2599
152	.	3.00000	0.272800E-01	0.116445E-01	0.161394E-01	-40.8379	38.6016
153	.	3.00000	0.135703E-01	0.655146E-02	0.181412E-01	33.6831	176.903
154	.	3.00000	0.118476E-01	0.141335E-01	0.368198E-02	-68.9722	-73.9466
155	.	3.00000	0.341848E-01	0.427355E-01	0.520036E-01	53.8798	23.0911
181	.	3.00000	0.182915E-01	0.783544E-02	0.311591E-01	70.3478	297.669
182	.	3.00000	0.279000E-01	0.129343E-01	0.579357E-01	107.655	347.924
183	.	3.00000	0.153901E-01	0.239735E-01	0.354103E-01	116.046	47.7059
189	.	3.00000	0.260791E-01	0.165691E-01	0.466044E-01	78.7042	180.934
190	.	3.00000	0.320533E-01	0.169176E-01	0.520959E-01	64.3750	211.486
199	.	3.00000	0.614540E-02	0.192425E-01	0.122959E-01	100.063	-36.1001
202	.	3.00000	0.743471E-01	0.705687E-01	0.714529E-01	-3.89277	1.25294

ID NO.		IDT	UGSH	ASH	MAG77SH	CGEMAGSU	CGEMAGSH
205	.	3.00000	0.180431E-01	0.118840E-01	0.328057E-02	-81.8181	-72.3950
207	.	3.00000	0.110524E-01	0.492719E-02	0.739803E-02	-33.0642	51.1470
208	.	3.00000	0.162132E-01	0.114284E-01	0.142280E-01	-12.2443	24.4969
209	.	3.00000	0.203054E-01	0.201640E-01	0.247809E-01	22.0409	[illegible]
213	.	3.00000	0.455803E-01	0.132681E-01	0.473847E-01	3.95870	257.132
214	.	3.00000	0.189241E-01	0.812963E-02	0.255655E-01	35.0954	214.474
219	.	3.00000	0.741612E-01	0.287714E-01	0.105896	42.7921	268.061
220	.	3.00000	0.822902E-02	0.536071E-02	0.100085E-02	-87.8375	-81.3299
221	.	3.00000	0.929584E-02	0.275338E-02	0.148456E-01	59.7010	439.175
223	.	3.00000	0.414810E-01	0.403132E-01	0.591010E-01	42.4770	46.6043
225	.	3.00000	0.123587E-01	0.479667E-02	0.183048E-01	48.1128	281.616
228	.	3.00000	0.513398E-02	0.140601E-01	0.137204E-01	167.247	-2.41602
229	.	3.00000	0.313096E-01	0.189026E-01	0.409614E-01	30.8271	116.697
231	.	3.00000	0.201464E-01	0.167415E-01	0.177211E-01	-12.0380	5.85165
233	.	3.00000	0.189258E-01	0.552438E-02	0.397722E-01	110.147	619.940
234	.	3.00000	0.114599E-01	0.787791E-02	0.166055E-01	44.9012	110.785
236	.	3.00000	0.242385E-01	0.116589E-01	0.131316E-01	-45.8235	12.6315
240	.	3.00000	0.289258E-01	0.159682E-01	0.246485E-01	-14.7872	54.3598
244	.	3.00000	0.119995E-01	0.231456E-01	0.195675E-01	63.0688	-15.4592
248	.	3.00000	0.555892E-01	0.288901E-01	0.103420	86.0427	257.976
252	.	3.00000	0.200159E-01	0.121413E-01	0.296542E-01	48.1530	144.242
259	.	3.00000	0.850778E-02	0.513032E-02	0.102326E-01	20.2739	99.4540
270	.	3.00000	0.153641E-01	0.449781E-02	0.125426E-01	-18.4699	178.661
271	.	3.00000	0.968540E-02	0.560828E-02	0.237159E-01	144.863	322.873
272	.	3.00000	0.140510E-01	0.596701E-02	0.298391E-01	112.363	400.067
274	.	3.00000	0.477301E-02	0.775050E-02	0.452066E-02	-5.28690	-41.6726
275	.	3.00000	0.504517E-01	0.195254E-01	0.637920E-01	26.4418	226.713
276	.	3.00000	0.307824E-01	0.126497E-01	0.320079E-01	3.98121	153.033
278	.	3.00000	0.336326E-01	0.129816E-01	0.501632E-01	49.1504	286.417
281	.	3.00000	0.414167E-01	0.213165E-01	0.886279E-01	113.991	315.772
295	.	3.00000	0.156986E-01	0.923647E-02	0.153763E-01	-2.05311	66.4733
300	.	3.00000	0.439185E-01	0.240075E-01	0.972727E-01	121.485	305.177
304	.	3.00000	0.136150E-01	0.111152E-01	0.266652E-01	95.8520	139.899
313	.	3.00000	0.294833E-01	0.601504E-01	0.272683E-01	-7.51261	-54.6664
315	.	3.00000	0.382841E-01	0.451023E-01	0.108095E-01	-71.7650	-76.0334
317	.	3.00000	0.274729E-01	0.185657E-01	0.515512E-01	87.0434	177.669
319	.	3.00000	0.781980E-02	0.464077E-02	0.154765E-01	97.9139	233.490
321	.	3.00000	0.100939	0.475777E-01	0.123661E-01	-87.7489	-74.0087
330	.	3.00000	0.153269E-01	0.191447E-01	0.197158E-01	28.6354	2.98290
332	.	3.00000	0.223622E-01	0.117638E-01	0.230056E-01	2.87714	[illegible]
337	.	3.00000	0.304465E-01	0.117744E-01	0.246195E-01	-19.1384	109.093
338	.	3.00000	0.350944E-01	0.108323E-01	0.383113E-01	9.16653	253.678
339	.	3.00000	0.258003E-01	0.208768E-01	0.252525E-01	-2.12333	20.9595
341	.	3.00000	0.685662E-02	0.318017E-02	0.189624E-02	-72.3445	-40.3731
342	.	3.00000	0.200945E-01	0.855248E-02	0.283479E-01	41.0726	231.458
343	.	3.00000	0.449335E-01	0.220442E-01	0.890932E-01	98.2779	304.158
351	.	3.00000	0.423852E-01	0.155984E-01	0.404933E-01	-4.46369	159.599
352	.	3.00000	0.208272E-01	0.435781E-01	0.339178E-02	-83.7147	-92.2168
355	.	3.00000	0.351999E-01	0.104614E-01	0.408041E-01	15.9213	290.044
133	.	5.00000	1.61382	0.922744	0.398751	-75.2915	-56.7664

ID NO.		IDT	UGSH	ASH	MAG77SH	CGEMAGSU	CGEMAGSH
334	.	5.00000	0.775541	0.454896	2.41030	210.789	429.556
255	.	5.00000	0.513298	0.641965	1.31669	156.516	105.103
235	.	5.00000	0.815146	0.570039	1.65663	103.231	190.617
340	.	5.00000	0.781221	0.489988	2.83904	263.410	479.410
299	.	5.00000	0.624372	0.324552	1.38305	121.510	326.141
314	.	5.00000	0.470371	0.522420	0.139118	-70.4236	-73.3704
118	.	5.00000	0.881011	0.644508	3.30774	275.448	413.219
20	.	5.00000	0.781335	0.468854	1.85990	138.041	296.690
348	.	5.00000	0.809841	0.492079	1.06684	31.7339	116.802
15	.	5.00000	0.671720	0.653581	1.73007	157.558	164.706
12	.	5.00000	1.15969	0.880602	3.47327	199.501	294.420
286	.	5.00000	0.810164	0.575093	2.62714	224.272	356.819
195	.	5.00000	0.502070	0.292407	0.182155	-63.7192	-37.7049
349	.	5.00000	0.865017	0.387294	0.608951	-29.6024	57.2321
226	.	5.00000	0.735006	0.697218	0.220521	-69.9973	-68.3713
243	.	5.00000	0.379218	0.230128	1.36141	259.005	491.589
294	.	5.00000	1.00691	0.837347	2.86330	184.364	241.949
302	.	5.00000	1.83352	1.07400	0.114876	-93.7347	-89.3040
323	.	5.00000	0.659710	0.553670	1.67165	153.392	201.922
49	.	5.00000	0.862008	0.631967	0.660087	-23.4245	4.44956
263	.	5.00000	0.450319	0.516961	0.225859	-49.8447	-56.3103
329	.	5.00000	1.00641	0.594937	1.79725	78.2267	202.091
201	.	5.00000	0.576195	0.538161	0.212626	-63.0984	-60.4903
204	.	5.00000	0.294334	0.717097	0.185158	-37.0927	-74.1795
222	.	5.00000	0.856283	0.484722	1.97810	131.010	308.090
193	.	5.00000	0.907967	0.539476	1.95076	114.850	261.604
110	.	5.00000	0.935972	0.460061	1.24298	32.8007	170.177
198	.	5.00000	0.411083	0.254654	1.21378	195.264	376.638
245	.	5.00000	1.03527	0.937403	0.148793	-85.6276	-84.1270
53	.	6.00000	0.684920	0.319170	2.29448	234.999	618.889
251	.	6.00000	0.499027	0.268629	0.829664	66.2564	208.851
312	.	6.00000	1.01906	0.470824	2.23018	118.845	373.675
353	.	6.00000	0.798084	0.391975	2.50321	213.652	538.615
111	.	6.00000	0.732097	0.349354	0.227527	-68.9212	-34.8719
1	.	6.00000	0.193272	0.110383	0.393771	103.739	256.732
269	.	6.00000	1.21540	0.573077	0.248322	-79.5686	-56.6666
296	.	6.00000	0.329427	0.207212	1.43884	336.770	594.380
191	.	6.00000	0.623014	0.337022	0.460190	-26.1349	36.5459
258	.	6.00000	0.505051	0.268502	1.74448	245.407	549.710
336	.	6.00000	0.932193	0.412139	2.39824	141.711	481.899
36	.	6.00000	0.739067	0.426985	1.01239	36.9821	137.103
305	.	6.00000	0.654063	0.432727	0.135560	-79.2742	-68.6731
346	.	6.00000	0.761325	0.477455	2.01601	164.803	322.241
287	.	6.00000	0.836490	0.564552	2.78216	232.600	392.809
290	.	6.00000	0.245868	0.141368	0.599852	143.973	[illegible]
246	.	6.00000	0.170626	0.134413	0.237181	39.0067	76.4572
107	.	6.00000	0.248756	0.210172	0.829259	233.363	294.562
		1	2	3	4	5	6

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Appendix E

Comparison of Grant Shares Based on Updated Municipal Assistance Grant and Municipal Incentive Grant Formulae With Existing Grant Shares for Individual Alberta Municipalities

Legend:

ID No.	=	Identification number: see Appendix H for conversion from municipality name to ID No.
IDT	=	Municipality type: 1 = City 2 = Town 3 = Village 5 = County 6 = Municipal District
UGSH	=	Percentage share of 1977 unconditional grants for all municipalities.
ASH	=	Percentage share of total grants for all municipalities.
MIG77SH	=	Percentage share of funds based on updated Municipal Assistance Grant and Municipal Incentive Grant Formulae.
CGEMIGSU	=	Percentage change in MIG77SH from UGSH.
CGEMIGSH	=	Percentage change in MIG77SH from ASH.

ID No.	IDT	UGSH	ASH	MIG77SH	CGEMIGSU	CGEMIGSH
46	1.00000	19.0474	23.0685	21.4464	12.5948	-7.03142
48	1.00000	0.506727	0.347312	0.552838	9.09977	59.1761
92	1.00000	0.155756	0.165162	0.225960	45.0724	36.8110
98	1.00000	17.5844	27.8270	20.8713	18.6925	-24.9963
132	1.00000	0.876456	0.931543	0.640067	-26.9709	-31.2896
203	1.00000	1.79360	2.11307	1.67009	-6.88601	-20.9639
217	1.00000	1.45531	3.81767	1.94427	33.5981	-49.0720
262	1.00000	1.61740	1.16826	2.04792	26.6182	75.2958
347	1.00000	0.356074	0.426262	0.221109	-37.9036	-48.1283
3	2.00000	0.114715	0.730613E-01	0.474612E-01	-58.6267	-35.0391
11	2.00000	0.120692	0.577242E-01	0.554000E-01	-54.0981	-4.02637
14	2.00000	0.105026	0.101943	0.765560E-01	-27.1074	-24.9034
16	2.00000	0.270441E-01	0.170445E-01	0.287780E-01	6.41155	68.8409
17	2.00000	0.615899E-01	0.443004E-01	0.394799E-01	-35.8987	-10.8813
21	2.00000	0.820864E-01	0.465862E-01	0.711187E-01	-13.3612	52.6603
30	2.00000	0.100149	0.372478E-01	0.736877E-01	-26.4221	97.8308
33	2.00000	0.234101	0.928806E-01	0.131172	-43.9676	41.2268
35	2.00000	0.191004	0.126287	0.793896E-01	-58.4357	-37.1357
39	2.00000	0.691202E-01	0.287857E-01	0.535442E-01	-22.5345	86.0098
43	2.00000	0.319343	0.317723	0.229095	-28.2605	-27.8948
47	2.00000	0.877690E-01	0.532853E-01	0.440409E-01	-49.8219	-17.3490
50	2.00000	0.952314E-01	0.815729E-01	0.703776E-01	-26.0983	-13.7242
52	2.00000	0.200749	0.998108E-01	0.116618	-41.9087	16.8385
56	2.00000	0.837287E-01	0.474588E-01	0.484526E-01	-42.1314	2.09398
58	2.00000	0.672814E-01	0.876968E-01	0.432215E-01	-35.7601	-50.7148
65	2.00000	0.373222	0.297491	0.162134	-56.5582	-45.4994
69	2.00000	0.258963	0.761697E-01	0.198722	-23.2625	160.894
70	2.00000	0.116874	0.367346E-01	0.382266E-01	-67.2924	4.06151
71	2.00000	0.118584	0.605786E-01	0.481173E-01	-59.4233	-20.5704
72	2.00000	0.128659	0.516570E-01	0.108517	-15.6554	110.071
75	2.00000	0.624905E-01	0.295947E-01	0.619412E-01	-0.879008	109.298
82	2.00000	0.461218E-01	0.185704E-01	0.260127E-01	-43.6001	40.0756
86	2.00000	0.165999	0.152328	0.922412E-01	-44.4327	-39.4456
88	2.00000	0.133739	0.108464	0.966939E-01	-27.6995	-10.8517
91	2.00000	0.379793	0.203574	0.205963	-45.7695	1.17378
95	2.00000	0.404071E-01	0.334671E-01	0.324602E-01	-19.6671	-3.00870
100	2.00000	0.266273	0.138306	0.180999	-32.0250	30.8684
101	2.00000	0.558608E-01	0.301489E-01	0.373023E-01	-33.2227	23.7268
106	2.00000	0.113916	0.628801E-01	0.928724E-01	-18.4729	47.6975
108	2.00000	0.701530E-01	0.838867E-01	0.421789E-01	-39.8758	-49.7192
115	2.00000	0.207897	0.963161E-01	0.146305	-29.6261	51.9008
116	2.00000	2.42359	1.17428	0.505575	-79.1394	-56.9460
117	2.00000	0.408479	0.223656	0.260369	-36.2590	16.4145
119	2.00000	0.826868E-01	0.989337E-01	0.317804E-01	-61.5653	-67.8770
126	2.00000	0.355250E-01	0.158465E-01	0.193007E-01	-45.6700	21.7984
130	2.00000	0.243434	0.115397	0.104325	-57.1443	-9.59424
131	2.00000	0.258196	0.253459	0.228297	-11.5803	-9.92771

ID No.		IDT	UG SH	ASH	MIG77SH	CGEMIGSU	CGEMIGSH
135	.	2.00000	0.343939E-01	0.143802E-01	0.306239E-01	-10.9613	112.959
137	.	2.00000	0.135322	0.632838E-01	0.794232E-01	-41.3081	25.5032
141	.	2.00000	0.167325	0.106064	0.751092E-01	-55.1118	-29.1848
143	.	2.00000	0.481018E-01	0.451351E-01	0.234004E-01	-51.3523	-48.1547
146	.	2.00000	0.931872E-01	0.164147	0.500156E-01	-46.3278	-69.5299
147	.	2.00000	0.191587	0.168860	0.665401E-01	-65.2690	-60.5945
148	.	2.00000	0.205893	0.796938E-01	0.136615	-33.6478	71.4247
151	.	2.00000	0.291974	0.193091	0.234489	-19.6885	21.4392
180	.	2.00000	0.155451	0.136038	0.104463	-32.7998	-23.2101
184	.	2.00000	0.118602E-01	0.239668E-01	0.138146E-01	16.4787	-42.3595
188	.	2.00000	0.452515E-01	0.235704E-01	0.338871E-01	-25.1139	43.7695
192	.	2.00000	0.107601	0.143512	0.871296E-01	-19.0252	-39.2877
194	.	2.00000	0.197734	0.125777	0.177933	-10.0142	41.4661
197	.	2.00000	0.523226E-01	0.577791E-01	0.490213E-01	-6.30948	-15.1574
200	.	2.00000	0.486945	0.277286	0.268096	-44.9433	-3.31428
211	.	2.00000	0.137361	0.444877E-01	0.737783E-01	-46.2888	65.8399
212	.	2.00000	0.909624E-01	0.107476	0.515570E-01	-43.3205	-52.0293
215	.	2.00000	0.767005E-01	0.777956E-01	0.323713E-01	-57.7951	-58.3892
216	.	2.00000	0.117579	0.547782E-01	0.805099E-01	-31.5272	46.9744
218	.	2.00000	0.413577E-01	0.728345E-01	0.268296E-01	-35.1279	-63.1636
224	.	2.00000	0.171569	0.991926E-01	0.650207E-01	-62.1023	-34.4500
227	.	2.00000	0.403445E-01	0.207001E-01	0.340693E-01	-15.5541	64.5852
232	.	2.00000	0.774438E-01	0.337574E-01	0.541770E-01	-30.0435	60.4889
238	.	2.00000	0.160213	0.856259E-01	0.594899E-01	-62.8682	-30.5235
239	.	2.00000	0.139171	0.245661	0.104319	-25.0425	-57.5352
241	.	2.00000	0.709053E-01	0.440593E-01	0.436199E-01	-38.4815	-0.997394
247	.	2.00000	0.175854	0.220409	0.137941	-21.5598	-37.4161
249	.	2.00000	0.418938E-01	0.471198E-01	0.337614E-01	-19.4119	-28.3498
250	.	2.00000	0.349320	0.157415	0.213996	-38.7392	35.9438
254	.	2.00000	0.313189	0.264537	0.228370	-27.0822	-13.6717
257	.	2.00000	0.674601E-01	0.645931E-01	0.364911E-01	-45.9071	-43.5063
260	.	2.00000	0.396279E-01	0.254874E-01	0.401255E-01	1.25551	57.4324
261	.	2.00000	0.209233	0.798094E-01	0.148368	-29.0899	85.9023
264	.	2.00000	0.136146	0.689992E-01	0.921654E-01	-32.3040	33.5745
265	.	2.00000	0.107910	0.828918E-01	0.546979E-01	-49.3116	-34.0129
266	.	2.00000	0.102242	0.482469E-01	0.808239E-01	-20.9482	67.5215
268	.	2.00000	0.174318	0.119022	0.144698	-16.9919	21.5720
280	.	2.00000	0.917147E-01	0.404673E-01	0.494145E-01	-46.1215	22.1096
284	.	2.00000	0.124143	0.118762	0.162403	30.8194	36.7461
285	.	2.00000	0.102787	0.777225E-01	0.594245E-01	-42.1866	-23.5426
289	.	2.00000	0.859999E-01	0.542619E-01	0.473886E-01	-44.8969	-12.6669
291	.	2.00000	0.312590	0.219117	0.205524	-34.2514	-6.20371
292	.	1.00000	1.12129	0.945146	1.46244	30.4251	54.7315
293	.	2.00000	0.210447	0.216739	0.188500	-10.4284	-13.0289
297	.	2.00000	0.292081E-01	0.153047E-01	0.239171E-01	-18.1149	56.2727
298	.	2.00000	0.307136	0.241016	0.196589	-35.9930	-18.4335
301	.	2.00000	0.102987	0.148375	0.878246E-01	-14.7225	-40.8089
303	.	2.00000	0.105546	0.446669E-01	0.665100E-01	-36.9847	48.9023
307	.	2.00000	0.104540	0.485614E-01	0.530472E-01	-49.2564	9.23748
309	.	2.00000	0.911321E-01	0.816659E-01	0.102799	12.8018	25.8771

ID No.		IDT	UGSH	ASH	MIG77SH	CGEMIGSU	CGEMIGSH
310	.	2.00000	0.117034	0.761309E-01	0.617720E-01	-47.2189	-18.8607
311	.	2.00000	0.200652	0.162260	0.192225	-4.20006	18.4673
316	.	2.00000	0.546600E-01	0.434377E-01	0.542736E-01	-0.706887	24.9459
318	.	2.00000	0.100344	0.711123E-01	0.485272E-01	-51.6392	-31.7598
320	.	2.00000	0.356644E-01	0.484735E-01	0.193955E-01	-45.6167	-59.9874
322	.	2.00000	0.447012E-01	0.419446E-01	0.479860E-01	7.34844	14.4034
325	.	2.00000	0.109349	0.748867E-01	0.412811E-01	-62.2481	-44.8753
326	.	2.00000	0.332985E-01	0.375004E-01	0.332597E-01	-0.116485	-11.3084
327	.	2.00000	0.185361	0.384674	0.142452	-23.1491	-62.9682
328	.	2.00000	0.174212	0.108541	0.161992	-7.01466	49.2446
331	.	2.00000	0.670919E-01	0.293743E-01	0.565436E-01	-15.7222	92.4935
333	.	2.00000	0.187100	0.965911E-01	0.552835E-01	-70.4524	-42.7654
335	.	2.00000	0.260250	0.195843	0.177666	-31.7323	-9.28131
345	.	2.00000	0.197902	0.941862E-01	0.164362	-16.9477	74.5077
350	.	2.00000	0.182840	0.146080	0.982273E-01	-46.2768	-32.7578
2	.	3.00000	0.162132E-01	0.124556E-01	0.146408E-01	-9.69822	17.5442
5	.	3.00000	0.532840E-01	0.216081E-01	0.480314E-01	-9.85786	122.284
6	.	3.00000	0.150177E-01	0.786289E-02	0.695707E-02	-53.6743	-11.5202
7	.	3.00000	0.849706E-02	0.505823E-02	0.698430E-02	-17.8033	38.0780
8	.	3.00000	0.259486E-01	0.268893E-01	0.173286E-01	-33.2197	-35.5558
10	.	3.00000	0.947275E-02	0.591491E-02	0.592517E-02	-37.4503	0.173473
13	.	3.00000	0.212310E-01	0.101418E-01	0.181054E-01	-14.7221	78.5217
18	.	3.00000	0.121729E-01	0.745579E-02	0.115150E-01	-5.40401	54.4443
19	.	3.00000	0.456590E-01	0.202702E-01	0.441798E-01	-3.23956	117.954
22	.	3.00000	0.264508E-01	0.370115E-01	0.118842E-01	-55.0705	-67.8905
23	.	3.00000	0.116773	0.895398E-01	0.107256	-8.14993	19.7863
24	.	3.00000	0.448566E-01	0.280082E-01	0.423501E-01	-5.58779	51.2063
25	.	3.00000	0.610502E-01	0.222923E-01	0.282000E-01	-53.8085	26.5013
27	.	3.00000	0.396351E-01	0.177272E-01	0.290950E-01	-26.5927	64.1264
29	.	3.00000	0.617399E-02	0.182834E-02	0.522437E-02	-15.3811	185.744
31	.	3.00000	0.968326E-01	0.767344E-01	0.604206E-01	-37.6030	-21.2601
32	.	3.00000	0.109095E-01	0.817676E-02	0.715109E-02	-34.4507	-12.5438
34	.	3.00000	0.403838E-01	0.160474E-01	0.470821E-01	16.5864	193.393
38	.	3.00000	0.155699E-01	0.455168E-02	0.754210E-02	-51.5598	65.6992
40	.	3.00000	0.595527E-01	0.259743E-01	0.297469E-01	-50.0495	14.5241
41	.	3.00000	0.327213E-01	0.220959E-01	0.176115E-01	-46.1771	-20.2949
42	.	3.00000	0.404142E-01	0.152893E-01	0.260552E-01	-35.5296	70.4151
44	.	3.00000	0.306949E-01	0.287777E-01	0.334466E-01	8.96492	16.2240
45	.	3.00000	0.150874E-01	0.953657E-02	0.192608E-01	27.6613	101.968
51	.	3.00000	0.279804E-01	0.307663E-01	0.174646E-01	-37.5827	-43.2345
54	.	3.00000	0.227232E-01	0.396281E-01	0.196719E-01	-13.4280	-50.3587
55	.	3.00000	0.215491E-01	0.188982E-01	0.339545E-01	57.5680	79.6708
59	.	3.00000	0.116832E-01	0.818733E-02	0.969731E-02	-16.9981	18.4429
60	.	3.00000	0.133219E-01	0.456411E-02	0.106056E-01	-20.3897	132.369
61	.	3.00000	0.241831E-01	0.181970E-01	0.119680E-01	-50.5110	-34.2309
62	.	3.00000	0.334021E-01	0.131019E-01	0.131156E-01	-60.7343	0.104427
63	.	3.00000	0.877047E-02	0.254206E-02	0.939606E-03	-89.2867	-63.0377
64	.	3.00000	0.168887E-01	0.101646E-01	0.205534E-01	21.6989	102.205
66	.	3.00000	0.203787E-01	0.104842E-01	0.161425E-01	-20.7874	53.9695
67	.	3.00000	0.666005E-02	0.498965E-02	0.251333E-02	-62.2625	-49.6291

ID No.		IDT	UGSH	ASH	M^{I}G77SH	CGEM^{I}GSU	CGEM^{I}GSH
68	.	3.00000	0.202786E-01	0.958360E-02	0.195816E-01	-3.43715	104.324
73	.	3.00000	0.436504E-01	0.272874E-01	0.261742E-01	-40.0368	-4.07966
76	.	3.00000	0.230841E-01	0.120489E-01	0.988798E-02	-57.1655	-17.9346
77	.	3.00000	0.235738E-01	0.691816E-02	0.179904E-01	-23.6847	160.046
78	.	3.00000	0.120192E-01	0.706318E-02	0.865597E-02	-27.9821	22.5505
79	.	3.00000	0.571617E-01	0.683231E-01	0.389665E-01	-31.8312	-42.9673
81	.	3.00000	0.172675E-01	0.705107E-02	0.137315E-01	-20.4780	94.7435
83	.	3.00000	0.173569E-01	0.101817E-01	0.268351E-01	54.6077	163.561
84	.	3.00000	0.149034E-01	0.116656E-01	0.520495E-02	-65.0754	-55.3822
85	.	3.00000	0.979619E-02	0.299216E-02	0.701106E-02	-28.4308	134.315
87	.	3.00000	0.157415E-01	0.671254E-02	0.875786E-02	-44.3644	30.4701
89	.	3.00000	0.164723E-01	0.131925E-01	0.761040E-02	-53.7989	-42.3127
90	.	3.00000	0.216760E-01	0.673377E-02	0.169343E-01	-21.8754	151.483
93	.	3.00000	0.196621E-01	0.118987E-01	0.198883E-01	1.15061	67.1471
94	.	3.00000	0.248890E-01	0.211388E-01	0.136273E-01	-45.2477	-35.5343
96	.	3.00000	0.134452E-01	0.630803E-02	0.848070E-02	-36.9239	34.4430
97	.	3.00000	0.201017E-01	0.117412E-01	0.208460E-01	3.70283	77.5452
102	.	3.00000	0.204859E-01	0.109220E-01	0.112452E-01	-45.1074	2.95973
103	.	3.00000	0.453677E-01	0.269657E-01	0.174871E-01	-61.4547	-35.1504
104	.	3.00000	0.338953E-01	0.167633E-01	0.241772E-01	-28.6709	44.2268
105	.	3.00000	0.470099E-01	0.266438E-01	0.375631E-01	-20.0953	40.9825
109	.	3.00000	0.192868E-01	0.562900E-02	0.970629E-02	-49.6740	72.4335
112	.	3.00000	0.350622E-01	0.253533E-01	0.229597E-01	-34.5173	-9.44099
113	.	3.00000	0.509574E-01	0.223156E-01	0.365015E-01	-28.3685	63.5697
114	.	3.00000	0.176392E-01	0.355293E-01	0.144119E-01	-18.2961	-59.4365
120	.	3.00000	0.178394E-01	0.962804E-02	0.100933E-01	-43.4209	4.83274
121	.	3.00000	0.348460E-02	0.439733E-02	0.184635E-02	-47.0140	-58.0120
122	.	3.00000	0.132129E-01	0.499815E-02	0.837746E-02	-36.5963	67.6112
124	.	3.00000	0.821007E-01	0.354893E-01	0.756809E-01	-7.81947	113.250
125	.	3.00000	0.167815E-01	0.904100E-02	0.111875E-01	-33.3339	23.7424
127	.	3.00000	0.492312E-01	0.265037E-01	0.221147E-01	-55.0799	-16.5601
128	.	3.00000	0.156092E-01	2.07743	0.917334E-02	-41.2313	-99.5584
136	.	3.00000	0.175499E-01	0.364928E-01	0.873120E-02	-50.2492	-76.0742
139	.	3.00000	0.659751E-02	0.422175E-02	0.573761E-02	-13.0336	35.9060
140	.	3.00000	0.165384E-01	0.683084E-02	0.910719E-02	-44.9332	33.3246
144	.	3.00000	0.175266E-01	0.910025E-02	0.144717E-01	-17.4305	59.0247
145	.	3.00000	0.121800E-01	0.795975E-02	0.804153E-02	-33.9776	1.02749
149	.	3.00000	0.155431E-01	0.564143E-02	0.140900E-01	-9.34902	149.759
150	.	3.00000	0.222550E-01	0.500096E-01	0.244670E-01	9.93929	-51.0754
152	.	3.00000	0.272800E-01	0.116445E-01	0.139282E-01	-48.9433	19.6123
153	.	3.00000	0.135703E-01	0.655146E-02	0.102826E-01	-24.2273	56.9509
154	.	3.00000	0.118476E-01	0.141335E-01	0.528205E-02	-55.4169	-62.6275
155	.	3.00000	0.341848E-01	0.427355E-01	0.287794E-01	-15.8125	-32.6570
181	.	3.00000	0.182915E-01	0.783544E-02	0.170701E-01	-6.67751	117.857
182	.	3.00000	0.279000E-01	0.129343E-01	0.290154E-01	3.99752	124.329
183	.	3.00000	0.163901E-01	0.239735E-01	0.177383E-01	8.22535	-26.0088
189	.	3.00000	0.260791E-01	0.165891E-01	0.220835E-01	-15.3213	33.1203
190	.	3.00000	0.320583E-01	0.169176E-01	0.260455E-01	-18.7558	53.9555
199	.	3.00000	0.614540E-02	0.192425E-01	0.692928E-02	12.7554	-63.9897
202	.	3.00000	0.743471E-01	0.705687E-01	0.395552E-01	-46.7965	-43.9479

ID No.		IDT	UGSH	ASH	MIG77SH	CGEMIGSU	CGEMIGSH
205	.	3.00000	0.180431E-01	0.118840E-01	0.750678E-02	-58.3953	-36.8329
207	.	3.00000	0.110524E-01	0.492719E-02	0.661612E-02	-40.1389	34.2776
208	.	3.00000	0.162132E-01	0.114284E-01	0.908003E-02	-43.9962	-20.5486
209	.	3.00000	0.203054E-01	0.201640E-01	0.127271E-01	-37.3214	-36.8820
213	.	3.00000	0.455803E-01	0.132681E-01	0.321633E-01	-29.4361	142.410
214	.	3.00000	0.189241E-01	0.812963E-02	0.159941E-01	-15.4826	96.7387
219	.	3.00000	0.741612E-01	0.287714E-01	0.520463E-01	-29.8200	80.8959
220	.	3.00000	0.822902E-02	0.536071E-02	0.314858E-02	-61.7381	-41.2657
221	.	3.00000	0.929584E-02	0.275338E-02	0.815083E-02	-12.3175	196.029
223	.	3.00000	0.414810E-01	0.403132E-01	0.272287E-01	-34.3587	-32.4572
225	.	3.00000	0.123587E-01	0.479667E-02	0.105841E-01	-14.3596	120.654
228	.	3.00000	0.513398E-02	0.140601E-01	0.664090E-02	29.3520	-52.7677
229	.	3.00000	0.313096E-01	0.189026E-01	0.231519E-01	-26.0548	22.4799
231	.	3.00000	0.201464E-01	0.167415E-01	0.117165E-01	-41.8431	-30.0152
233	.	3.00000	0.189258E-01	0.552438E-02	0.200498E-01	5.93853	262.933
234	.	3.00000	0.114599E-01	0.787791E-02	0.957206E-02	-16.4732	21.5051
236	.	3.00000	0.242385E-01	0.116589E-01	0.149948E-01	-38.1366	28.6123
240	.	3.00000	0.289258E-01	0.159682E-01	0.155831E-01	-46.1271	-2.41124
244	.	3.00000	0.119995E-01	0.231456E-01	0.957472E-02	-20.2076	-58.6327
248	.	3.00000	0.555892E-01	0.288901E-01	0.509972E-01	-8.26056	76.5213
252	.	3.00000	0.200159E-01	0.121413E-01	0.144412E-01	-27.8512	18.9430
259	.	3.00000	0.850778E-02	0.513032E-02	0.723540E-02	-14.9555	41.0320
270	.	3.00000	0.153841E-01	0.449781E-02	0.981506E-02	-36.1998	118.218
271	.	3.00000	0.968540E-02	0.560828E-02	0.119218E-01	23.0905	112.575
272	.	3.00000	0.140510E-01	0.596701E-02	0.160180E-01	13.9988	168.442
274	.	3.00000	0.477301E-02	0.775050E-02	0.309336E-02	-35.1906	-60.0883
275	.	3.00000	0.504517E-01	0.195254E-01	0.344252E-01	-31.7660	76.3096
276	.	3.00000	0.307824E-01	0.126497E-01	0.202127E-01	-34.3368	59.7878
278	.	3.00000	0.336326E-01	0.129816E-01	0.244908E-01	-27.1815	88.6574
281	.	3.00000	0.414167E-01	0.213165E-01	0.508454E-01	22.7654	138.526
295	.	3.00000	0.156986E-01	0.923647E-02	0.120827E-01	-23.0331	30.8150
300	.	3.00000	0.439185E-01	0.240075E-01	0.437350E-01	-0.417656	82.1725
304	.	3.00000	0.136150E-01	0.111152E-01	0.136476E-01	0.240040	22.7841
313	.	3.00000	0.294833E-01	0.601504E-01	0.214705E-01	-27.1774	-64.3053
315	.	3.00000	0.382841E-01	0.451023E-01	0.139887E-01	-63.4609	-68.9845
317	.	3.00000	0.274729E-01	0.185657E-01	0.250431E-01	-8.84433	34.8895
319	.	3.00000	0.781980E-02	0.464077E-02	0.895039E-02	14.4580	92.8645
321	.	3.00000	0.100939	0.475777E-01	0.313553E-01	-68.9364	-34.0966
330	.	3.00000	0.153269E-01	0.191447E-01	0.127419E-01	-16.8657	-33.4443
332	.	3.00000	0.223622E-01	0.117638E-01	0.159646E-01	-28.6091	35.7091
337	.	3.00000	0.304465E-01	0.117744E-01	0.138026E-01	-54.6659	17.2257
338	.	3.00000	0.350944E-01	0.108323E-01	0.201538E-01	-42.5726	86.0534
339	.	3.00000	0.258003E-01	0.208768E-01	0.206413E-01	-19.9962	-1.12841
341	.	3.00000	0.685662E-02	0.318017E-02	0.291430E-02	-57.4965	-8.36018
342	.	3.00000	0.200945E-01	0.855248E-02	0.162294E-01	-19.2346	89.7629
343	.	3.00000	0.449335E-01	0.220442E-01	0.426037E-01	-5.18500	93.2650
351	.	3.00000	0.423852E-01	0.155984E-01	0.222460E-01	-47.5146	42.6177
352	.	3.00000	0.208272E-01	0.435781E-01	0.868637E-02	-58.2931	-80.0671
355	.	3.00000	0.351998E-01	0.104614E-01	0.188673E-01	-46.3994	80.3514
133	.	5.00000	1.61382	0.922744	0.536830	-66.7355	-41.8224

ID No.		IDT	UG SH	ASH	MIG77SH	CGEMI GSU	CGEMI GSH
334	.	5.00000	0.775541	0.454896	1.18302	52.5411	160.064
255	.	5.00000	0.513298	0.641965	0.727470	41.7247	13.3192
235	.	5.00000	0.815146	0.570039	0.937516	15.0120	64.4652
340	.	5.00000	0.781221	0.489988	1.34834	72.5938	175.178
299	.	5.00000	0.624372	0.324552	0.758613	21.5000	133.742
314	.	5.00000	0.470371	0.522420	0.274071	-41.7329	-47.5381
118	.	5.00000	0.881011	0.644508	1.55405	76.3941	141.122
20	.	5.00000	0.781335	0.468854	0.939427	20.2334	100.367
348	.	5.00000	0.809841	0.492079	0.636279	-21.4316	29.3043
15	.	5.00000	0.671720	0.653581	0.800471	19.1672	22.4745
12	.	5.00000	1.15969	0.880602	1.53433	32.3057	74.2364
286	.	5.00000	0.810164	0.575093	1.15769	42.8956	101.305
195	.	5.00000	0.502070	0.292407	0.297640	-40.7175	1.78947
349	.	5.00000	0.865017	0.387294	0.542273	-37.3107	40.0157
226	.	5.00000	0.735006	0.697218	0.405634	-44.8121	-41.8210
243	.	5.00000	0.379218	0.230128	0.742811	95.8797	222.782
294	.	5.00000	1.00691	0.837347	1.27024	26.1517	51.6980
302	.	5.00000	1.83352	1.07400	1.24766	-31.9527	16.1693
323	.	5.00000	0.659710	0.553670	0.820150	24.3198	48.1298
49	.	5.00000	0.862008	0.631967	0.493572	-42.7416	-21.8991
263	.	5.00000	0.450319	0.516961	0.427017	-5.17457	-17.3986
329	.	5.00000	1.00841	0.594937	0.931134	-7.66272	56.5097
201	.	5.00000	0.576195	0.538161	0.395172	-31.4169	-26.5698
204	.	5.00000	0.294334	0.717097	0.309178	5.04303	-56.8848
222	.	5.00000	0.856283	0.484722	1.00409	17.2612	107.147
193	.	5.00000	0.907967	0.539476	0.890725	-1.89899	65.1093
110	.	5.00000	0.935972	0.460061	0.705374	-24.6373	53.3217
198	.	5.00000	0.411083	0.254654	0.637464	55.0695	150.325
245	.	5.00000	1.03527	0.937403	0.709649	-31.4531	-24.2963
53	.	6.00000	0.684920	0.319170	1.06160	54.9966	232.614
251	.	6.00000	0.499027	0.268629	0.491951	-1.41801	83.1335
312	.	6.00000	1.01906	0.470824	1.09838	7.78351	133.290
353	.	6.00000	0.798084	0.391975	1.22962	54.0715	213.699
111	.	6.00000	0.732097	0.349354	0.465732	-36.3838	33.3125
1	.	6.00000	0.193272	0.110383	0.183953	-4.82186	66.6495
269	.	6.00000	1.21540	0.573077	0.780617	-35.7727	36.2151
296	.	6.00000	0.329427	0.207212	0.685839	108.192	230.984
191	.	6.00000	0.623014	0.337022	0.408446	-34.4403	21.1928
258	.	6.00000	0.505051	0.268502	0.839166	66.1547	212.537
336	.	6.00000	0.992193	0.412139	1.09254	10.1140	165.091
36	.	6.00000	0.739067	0.426985	0.513660	-30.4988	20.2995
305	.	6.00000	0.654063	0.432727	0.420723	-35.6754	-2.77396
346	.	6.00000	0.761325	0.477455	1.00520	32.0326	110.532
287	.	6.00000	0.836490	0.564552	1.20051	43.5171	112.647
290	.	6.00000	0.245868	0.141368	0.274649	11.7057	94.2796
246	.	6.00000	0.170626	0.134413	0.158023	-7.38595	17.5656
107	.	6.00000	0.248756	0.210172	0.402176	61.6752	91.3559
		1	2	3	4	5	6

Appendix F

Comparison of Grant Shares Based on Revenue Deficiency Formula With Existing Grant Shares for Individual Alberta Municipalities

Legend:

ID NO. = Identification number: see Appendix H for conversion from municipality name to ID No.

IDT = Municipality type:

1 = City
2 = Town
3 = Village
5 = County
6 = Municipal District

UGSH = Percentage share of 1977 unconditional grants for all municipalities.

ASH = Percentage share of total grants for all municipalities.

SASKSH = Percentage share of funds based on revenue deficiency (Saskatchewan) formula.

CGESASKU = Percentage change in SASKSH from UGSH.

CGESASKS = Percentage change in SASKSH from ASH.

ID NO.		IDT	UGSH	ASH	SASKSH	CGESASKU	CGESASKS
46	.	1.00000	19.0474	23.0685	27.5027	44.3905	19.2220
48	.	1.00000	0.506727	0.347312	0.451185	-10.9609	29.9076
92	.	1.00000	0.155756	0.165162	0.255551	64.0711	54.7276
98	.	1.00000	17.5844	27.8270	26.3007	52.4122	-3.68822
132	.	1.00000	0.876456	0.931543	0.946502	7.99198	1.60580
203	.	1.00000	1.79360	2.11307	2.77518	54.7265	31.3335
217	.	1.00000	1.45531	3.81767	2.42873	66.8879	-36.3818
262	.	1.00000	1.61740	1.16826	2.33163	44.1592	99.5805
347	.	1.00000	0.356074	0.426262	0.266670	-25.1083	-37.4398
3	.	2.00000	0.114715	0.730613E-01	0.133384E-01	-88.3220	-81.6642
11	.	2.00000	0.120692	0.577242E-01	0.749037E-01	-37.9383	29.7612
14	.	2.00000	0.105026	0.101943	0.108108	2.93427	6.04668
16	.	2.00000	0.270441E-01	0.170445E-01	0.319730E-01	18.2256	87.5859
17	.	2.00000	0.615899E-01	0.443004E-01	0.452761E-01	-26.4877	2.20251
21	.	2.00000	0.820864E-01	0.465862E-01	0.732259E-01	-10.7941	57.1835
30	.	2.00000	0.100149	0.372478E-01	0.732675E-01	-26.8416	96.7027
33	.	2.00000	0.234101	0.928806E-01	0.137770	-41.1494	48.3298
35	.	2.00000	0.191004	0.126287	0.134241	-29.7185	6.29787
39	.	2.00000	0.691202E-01	0.287857E-01	0.605152E-01	-12.4494	110.226
43	.	2.00000	0.319343	0.317723	0.239481	-9.35103	-8.88889
47	.	2.00000	0.877690E-01	0.532853E-01	0.459518E-01	-47.6446	-13.7627
50	.	2.00000	0.952314E-01	0.815729E-01	0.820084E-01	-13.8852	0.533772
52	.	2.00000	0.200749	0.998108E-01	0.158507	-21.0421	58.8074
56	.	2.00000	0.837287E-01	0.474588E-01	0.560971E-01	-33.0013	18.2016
58	.	2.00000	0.672814E-01	0.876968E-01	0.533913E-01	-20.6447	-39.1182
65	.	2.00000	0.373222	0.297491	0.158409	-57.5563	-46.7515
69	.	2.00000	0.258963	0.761697E-01	0.197333	-23.7795	159.136
70	.	2.00000	0.116874	0.367346E-01	0.487350E-01	-58.3010	32.6680
71	.	2.00000	0.118594	0.605786E-01	0.637285E-01	-46.2586	5.19962
72	.	2.00000	0.128659	0.516570E-01	0.103152	-19.8252	99.6859
75	.	2.00000	0.624905E-01	0.295947E-01	0.672303E-01	7.58496	127.170
82	.	2.00000	0.461218E-01	0.185704E-01	0.253604E-01	-45.0143	36.5632
86	.	2.00000	0.165999	0.152328	0.100305	-39.2136	-33.7580
88	.	2.00000	0.133739	0.108464	0.123490	-7.66323	13.8535
91	.	2.00000	0.379793	0.203574	0.229265	-39.6343	12.6199
95	.	2.00000	0.404071E-01	0.334671E-01	0.347515E-01	-13.9965	3.83778
100	.	2.00000	0.266273	0.138306	0.193764	-27.2311	40.0979
101	.	2.00000	0.558608E-01	0.301489E-01	0.379941E-01	-31.9843	26.0213
106	.	2.00000	0.113916	0.628801E-01	0.112236	-1.47468	78.4922
108	.	2.00000	0.701530E-01	0.838867E-01	0.528748E-01	-24.6293	-36.9688
115	.	2.00000	0.207897	0.963161E-01	0.165825	-20.2367	72.1675
116	.	2.00000	2.42359	1.17423	0.775750	-67.9917	-33.9384
117	.	2.00000	0.408479	0.223655	0.194375	-52.4154	-13.0929
119	.	2.00000	0.826868E-01	0.989337E-01	0.631525E-01	-23.6245	-36.1669
126	.	2.00000	0.355250E-01	0.158465E-01	0.137737E-01	-61.2282	-13.0803
130	.	2.00000	0.243434	0.115397	0.143068	-41.2291	23.9796
131	.	2.00000	0.258196	0.253459	0.245616	-4.87244	-3.09451

ID NO.		IDT	UGSH	ASH	SASKSH	CGESASKU	CGESASKS
135	.	2.00000	0.343939E-01	0.143802E-01	0.218010E-01	-36.6136	51.6049
137	.	2.00000	0.135322	0.632838E-01	0.888681E-01	-34.3285	40.4278
141	.	2.00000	0.167325	0.106064	0.122066	-27.0485	15.0875
143	.	2.00000	0.481018E-01	0.451351E-01	0.209684E-01	-56.4082	-53.5429
146	.	2.00000	0.931872E-01	0.164147	0.703316E-01	-24.5265	-57.1533
147	.	2.00000	0.191587	0.168860	0.102425	-46.5387	-39.3434
148	.	2.00000	0.205893	0.796938E-01	0.156922	-23.7850	96.9056
151	.	2.00000	0.291974	0.193091	0.195038	-33.2002	1.00813
180	.	2.00000	0.155451	0.136038	0.140856	-9.38885	3.54156
184	.	2.00000	0.118602E-01	0.239668E-01	0.841073E-02	-29.0841	-64.9067
188	.	2.00000	0.452515E-01	0.235704E-01	0.398514E-01	-11.9337	69.0734
192	.	2.00000	0.107601	0.143512	0.107726	0.116062	-24.9362
194	.	2.00000	0.197734	0.125777	0.198721	0.499153	57.9942
197	.	2.00000	0.523226E-01	0.577791E-01	0.503910E-01	-3.69164	-12.7867
200	.	2.00000	0.486945	0.277286	0.389687	-19.9730	40.5364
211	.	2.00000	0.137361	0.444877E-01	0.784335E-01	-42.8998	76.3038
212	.	2.00000	0.909624E-01	0.107476	0.537571E-01	-40.9019	-49.9823
215	.	2.00000	0.767005E-01	0.777956E-01	0.454180E-01	-40.7852	-41.6188
216	.	2.00000	0.117579	0.547782E-01	0.798580E-01	-32.0816	45.7844
218	.	2.00000	0.413577E-01	0.728345E-01	0.282711E-01	-31.6426	-61.1845
224	.	2.00000	0.171569	0.991926E-01	0.963563E-01	-43.8382	-2.85938
227	.	2.00000	0.403445E-01	0.207001E-01	0.298474E-01	-26.0188	44.1895
232	.	2.00000	0.774438E-01	0.337574E-01	0.574216E-01	-25.8538	70.1007
238	.	2.00000	0.160213	0.856259E-01	0.804048E-01	-49.8138	-6.09760
239	.	2.00000	0.139171	0.245661	0.150458	8.10957	-38.7539
241	.	2.00000	0.709053E-01	0.440593E-01	0.482121E-01	-32.0050	9.42535
247	.	2.00000	0.175854	0.220409	0.174971	-0.502115	-20.6151
249	.	2.00000	0.418938E-01	0.471198E-01	0.384739E-01	-8.16342	-18.3489
250	.	2.00000	0.349320	0.157415	0.215811	-38.2195	37.0970
254	.	2.00000	0.313189	0.264537	0.229086	-26.8537	-13.4013
257	.	2.00000	0.674601E-01	0.645931E-01	0.644807E-01	-4.41645	-0.174040
260	.	2.00000	0.396279E-01	0.254874E-01	0.344253E-01	-13.1287	35.0676
261	.	2.00000	0.209233	0.798094E-01	0.144347	-31.0115	80.8646
264	.	2.00000	0.136146	0.689992E-01	0.146230	7.40700	111.931
265	.	2.00000	0.107910	0.828918E-01	0.685417E-01	-36.4825	-17.3118
266	.	2.00000	0.102242	0.482469E-01	0.852654E-01	-16.6041	76.7272
268	.	2.00000	0.174318	0.119022	0.171485	-1.62483	44.0783
280	.	2.00000	0.917147E-01	0.404673E-01	0.473380E-01	-48.3855	16.9785
284	.	2.00000	0.124143	0.118762	0.177515	42.9923	49.4704
285	.	2.00000	0.102787	0.777225E-01	0.603583E-01	-41.2781	-22.3412
289	.	2.00000	0.859999E-01	0.542619E-01	0.489851E-01	-43.0405	-9.72476
291	.	2.00000	0.312590	0.219117	0.298575	-4.48361	36.2627
292	.	1.00000	1.12129	0.945146	1.73654	54.8702	83.7322
293	.	2.00000	0.210447	0.216739	0.188865	-10.2550	-12.8605
297	.	2.00000	0.292081E-01	0.153047E-01	0.177330E-01	-39.2875	15.8662
298	.	2.00000	0.307136	0.241016	0.180703	-41.1652	-25.0247
301	.	2.00000	0.102987	0.148375	0.131159	27.3551	-11.6028
303	.	2.00000	0.105546	0.446669E-01	0.788366E-01	-25.3059	76.4990
307	.	2.00000	0.104540	0.485614E-01	0.603533E-01	-42.2676	24.2825
309	.	2.00000	0.911321E-01	0.816659E-01	0.120173	31.8670	47.1522

ID NO.	IDT	UGSH	ASH	SASKSH	CGESASKU	CGESASKS
310	2.00000	0.117034	0.761309E-01	0.849920E-01	-27.3786	11.6393
311	2.00000	0.200652	0.162260	0.221046	10.1636	36.2296
316	2.00000	0.546600E-01	0.434377E-01	0.730236E-01	33.5959	68.1111
318	2.00000	0.100344	0.711123E-01	0.546112E-01	-45.5759	-23.2043
320	2.00000	0.356644E-01	0.484735E-01	0.263840E-01	-26.0216	-45.5703
322	2.00000	0.447012E-01	0.419446E-01	0.531747E-01	18.9558	26.7736
325	2.00000	0.109349	0.748867E-01	0.734745E-01	-32.8071	-1.88588
326	2.00000	0.332985E-01	0.375004E-01	0.383238E-01	15.0916	2.19564
327	2.00000	0.185361	0.384674	0.158543	-14.4651	-58.7837
328	2.00000	0.174212	0.108541	0.168619	-3.21059	55.3502
331	2.00000	0.670919E-01	0.293743E-01	0.625137E-01	-6.82382	112.818
333	2.00000	0.187100	0.965911E-01	0.694469E-01	-62.8824	-28.1022
335	2.00000	0.260250	0.195843	0.201425	-22.6033	2.84996
345	2.00000	0.197902	0.941862E-01	0.171669	-13.2557	82.2652
350	2.00000	0.182840	0.146080	0.154172	-15.6790	5.53961
2	3.00000	0.162132E-01	0.124556E-01	0.112063E-01	-30.8816	-10.0299
5	3.00000	0.532840E-01	0.216081E-01	0.386865E-01	-27.3957	79.0372
6	3.00000	0.150177E-01	0.786289E-02	0.527032E-02	-64.9060	-32.9722
7	3.00000	0.849706E-02	0.505823E-02	0.461524E-02	-45.6843	-8.75779
8	3.00000	0.259486E-01	0.268893E-01	0.146113E-01	-43.6914	-45.6612
10	3.00000	0.947275E-02	0.591491E-02	0.424511E-02	-55.1861	-28.2304
13	3.00000	0.212310E-01	0.101418E-01	0.106611E-01	-49.7851	5.12037
18	3.00000	0.121729E-01	0.745579E-02	0.668388E-02	-45.0920	-10.3531
19	3.00000	0.456590E-01	0.202702E-01	0.432414E-01	-5.29494	113.325
22	3.00000	0.264508E-01	0.370115E-01	0.113596E-01	-57.0538	-69.3079
23	3.00000	0.116773	0.895398E-01	0.846073E-01	-27.5458	-5.50869
24	3.00000	0.448566E-01	0.280082E-01	0.367090E-01	-18.1637	31.0653
25	3.00000	0.610502E-01	0.222923E-01	0.190420E-01	-68.8093	-14.5802
27	3.00000	0.396351E-01	0.177272E-01	0.178011E-01	-55.0876	0.416565
29	3.00000	0.617399E-02	0.182834E-02	0.321562E-02	-47.9167	75.8767
31	3.00000	0.968326E-01	0.767344E-01	0.557498E-01	-42.4266	-27.3471
32	3.00000	0.109095E-01	0.817676E-02	0.495555E-02	-54.5758	-39.3948
34	3.00000	0.403838E-01	0.160474E-01	0.414976E-01	2.75793	158.593
38	3.00000	0.155699E-01	0.455168E-02	0.459703E-02	-70.4749	0.996208
40	3.00000	0.595527E-01	0.259743E-01	0.276641E-01	-53.5469	6.50549
41	3.00000	0.327213E-01	0.220959E-01	0.134925E-01	-58.7655	-38.9367
42	3.00000	0.404142E-01	0.152893E-01	0.195475E-01	-51.6322	27.8509
44	3.00000	0.306949E-01	0.287777E-01	0.226174E-01	-26.3154	-21.4067
45	3.00000	0.150874E-01	0.953657E-02	0.101237E-01	-32.8999	6.15635
51	3.00000	0.279804E-01	0.307663E-01	0.145693E-01	-47.9305	-52.6454
54	3.00000	0.227232E-01	0.396281E-01	0.115231E-01	-49.2628	-70.9067
55	3.00000	0.215491E-01	0.188982E-01	0.230795E-01	7.10173	22.1254
59	3.00000	0.116832E-01	0.818733E-02	0.559034E-02	-52.1508	-31.7196
60	3.00000	0.133219E-01	0.456411E-02	0.698373E-02	-47.5770	53.0141
61	3.00000	0.241831E-01	0.181970E-01	0.872393E-02	-63.9255	-52.0584
62	3.00000	0.334021E-01	0.131019E-01	0.947367E-02	-71.6375	-27.6923
63	3.00000	0.877047E-02	0.254206E-02	0.125185E-02	-85.7265	-50.7546
64	3.00000	0.168887E-01	0.101646E-01	0.123102E-01	-27.1098	21.1081
66	3.00000	0.203787E-01	0.104842E-01	0.970646E-02	-52.3695	-7.41821
67	3.00000	0.666005E-02	0.498965E-02	0.222881E-02	-66.5346	-55.3313

ID NO.		IDT	UGSH	ASH	SASKSH	CGESASKU	CGESASKS
68	.	3.00000	0.202786E-01	0.958360E-02	0.115744E-01	-42.9228	20.7734
73	.	3.00000	0.436504E-01	0.272874E-01	0.233972E-01	-46.3986	-14.2563
76	.	3.00000	0.230841E-01	0.120489E-01	0.555138E-02	-75.9515	-53.9262
77	.	3.00000	0.235738E-01	0.691816E-02	0.113212E-01	-51.9754	63.6449
78	.	3.00000	0.120192E-01	0.706318E-02	0.625812E-02	-47.9323	-11.3980
79	.	3.00000	0.571617E-01	0.683231E-01	0.368927E-01	-35.4590	-46.0026
81	.	3.00000	0.172675E-01	0.705107E-02	0.769018E-02	-55.4645	9.06401
83	.	3.00000	0.173569E-01	0.101817E-01	0.182215E-01	4.98161	78.9633
84	.	3.00000	0.149034E-01	0.116656E-01	0.411310E-02	-72.4015	-64.7417
85	.	3.00000	0.979619E-02	0.299216E-02	0.450291E-02	-54.0341	50.4904
87	.	3.00000	0.157415E-01	0.671254E-02	0.547248E-02	-65.2352	-18.4737
89	.	3.00000	0.164723E-01	0.131925E-01	0.516912E-02	-68.6194	-60.8178
90	.	3.00000	0.216760E-01	0.673377E-02	0.111988E-01	-48.3354	66.3081
93	.	3.00000	0.196621E-01	0.118987E-01	0.133182E-01	-32.2646	11.9297
94	.	3.00000	0.248890E-01	0.211388E-01	0.775409E-02	-68.8453	-63.3182
96	.	3.00000	0.134452E-01	0.630803E-02	0.499082E-02	-62.8803	-20.8815
97	.	3.00000	0.201017E-01	0.117412E-01	0.142971E-01	-28.8759	21.7684
102	.	3.00000	0.204859E-01	0.109220E-01	0.676996E-02	-66.9530	-38.0151
103	.	3.00000	0.453677E-01	0.269657E-01	0.996409E-02	-78.0370	-63.0490
104	.	3.00000	0.338953E-01	0.167633E-01	0.167472E-01	-50.5915	-0.963390E-01
105	.	3.00000	0.470099E-01	0.266438E-01	0.307056E-01	-34.6827	15.2448
109	.	3.00000	0.192868E-01	0.562900E-02	0.535766E-02	-72.2211	-4.82044
112	.	3.00000	0.350622E-01	0.253533E-01	0.185598E-01	-47.0662	-26.7954
113	.	3.00000	0.509574E-01	0.223156E-01	0.378050E-01	-25.8105	69.4108
114	.	3.00000	0.176392E-01	0.355293E-01	0.774992E-02	-56.0643	-78.1873
120	.	3.00000	0.178394E-01	0.962804E-02	0.582360E-02	-67.3553	-39.5141
121	.	3.00000	0.348460E-02	0.439733E-02	0.135779E-02	-61.0347	-69.1225
122	.	3.00000	0.132129E-01	0.499815E-02	0.543668E-02	-58.8532	8.77390
124	.	3.00000	0.821007E-01	0.354893E-01	0.629987E-01	-23.2666	77.5146
125	.	3.00000	0.167815E-01	0.904100E-02	0.889407E-02	-47.0007	-1.62514
127	.	3.00000	0.492312E-01	0.265037E-01	0.154687E-01	-68.5795	-41.6359
128	.	3.00000	0.156092E-01	2.07743	0.594176E-02	-61.9343	-99.7140
136	.	3.00000	0.175499E-01	0.364928E-01	0.503964E-02	-71.2839	-86.1900
139	.	3.00000	0.659751E-02	0.422175E-02	0.328058E-02	-50.2754	-22.2933
140	.	3.00000	0.165384E-01	0.683084E-02	0.529635E-02	-67.9755	-22.4641
144	.	3.00000	0.175266E-01	0.910025E-02	0.852432E-02	-51.3637	-6.32881
145	.	3.00000	0.121800E-01	0.795975E-02	0.536432E-02	-55.9580	-32.6069
149	.	3.00000	0.155431E-01	0.564143E-02	0.770870E-02	-50.4044	36.6444
150	.	3.00000	0.222550E-01	0.500096E-01	0.188045E-01	-15.5042	-62.3981
152	.	3.00000	0.272800E-01	0.116445E-01	0.115803E-01	-57.5501	-0.551254
153	.	3.00000	0.135703E-01	0.655146E-02	0.723905E-02	-46.6552	10.4952
154	.	3.00000	0.118476E-01	0.141335E-01	0.403483E-02	-65.9438	-71.4519
155	.	3.00000	0.341848E-01	0.427355E-01	0.196334E-01	-42.5670	-54.0583
181	.	3.00000	0.182915E-01	0.783544E-02	0.983557E-02	-46.2232	25.5394
182	.	3.00000	0.279000E-01	0.129343E-01	0.214822E-01	-23.0028	66.0876
183	.	3.00000	0.163901E-01	0.239735E-01	0.111883E-01	-31.7376	-53.3306
189	.	3.00000	0.260791E-01	0.165891E-01	0.135358E-01	-48.0970	-18.4051
190	.	3.00000	0.320583E-01	0.169176E-01	0.179073E-01	-44.1397	5.85356
199	.	3.00000	0.614540E-02	0.192425E-01	0.387547E-02	-36.9371	-79.8598
202	.	3.00000	0.743471E-01	0.705687E-01	0.345386E-01	-53.5441	-51.0563

ID NO.		IDT	UGSH	ASH	SASKSH	CGESASKU	CGESASKS
205	.	3.00000	0.180431E-01	0.118840E-01	0.519942E-02	-71.1833	-56.2485
207	.	3.00000	0.110524E-01	0.492719E-02	0.466122E-02	-57.8263	-5.39803
208	.	3.00000	0.162132E-01	0.114284E-01	0.557053E-02	-65.6420	-51.2571
209	.	3.00000	0.203054E-01	0.201640E-01	0.750624E-02	-63.0333	-62.7741
213	.	3.00000	0.455803E-01	0.132681E-01	0.265474E-01	-41.7570	100.084
214	.	3.00000	0.189241E-01	0.812963E-02	0.125125E-01	-33.8806	53.9121
219	.	3.00000	0.741612E-01	0.287714E-01	0.422600E-01	-43.0161	46.8817
220	.	3.00000	0.822902E-02	0.536071E-02	0.976764E-03	-88.1302	-81.7792
221	.	3.00000	0.929584E-02	0.275338E-02	0.453812E-02	-51.1812	64.8196
223	.	3.00000	0.414810E-01	0.403132E-01	0.172794E-01	-58.3438	-57.1371
225	.	3.00000	0.123587E-01	0.479667E-02	0.694168E-02	-43.8317	44.7188
228	.	3.00000	0.513398E-02	0.140601E-01	0.373381E-02	-27.2726	-73.4439
229	.	3.00000	0.313096E-01	0.189026E-01	0.157930E-01	-49.5587	-16.4510
231	.	3.00000	0.201464E-01	0.167415E-01	0.846316E-02	-57.9916	-49.4479
233	.	3.00000	0.189258E-01	0.552438E-02	0.127247E-01	-32.7654	130.337
234	.	3.00000	0.114599E-01	0.787791E-02	0.674968E-02	-41.1016	-14.3214
236	.	3.00000	0.242385E-01	0.116589E-01	0.124834E-01	-48.4977	7.07188
240	.	3.00000	0.289258E-01	0.159682E-01	0.145967E-01	-49.5374	-8.58886
244	.	3.00000	0.119995E-01	0.231456E-01	0.549083E-02	-54.2413	-76.2770
248	.	3.00000	0.555892E-01	0.288901E-01	0.416934E-01	-24.9972	44.3172
252	.	3.00000	0.200159E-01	0.121413E-01	0.861644E-02	-56.9520	-29.0320
259	.	3.00000	0.850778E-02	0.513032E-02	0.472317E-02	-44.4842	-7.93633
270	.	3.00000	0.153841E-01	0.449781E-02	0.731099E-02	-52.4768	62.5454
271	.	3.00000	0.968540E-02	0.560828E-02	0.676428E-02	-30.1600	20.6123
272	.	3.00000	0.140510E-01	0.596701E-02	0.990161E-02	-29.5308	65.9391
274	.	3.00000	0.477301E-02	0.775050E-02	0.241226E-02	-49.4604	-68.8761
275	.	3.00000	0.504517E-01	0.195254E-01	0.241362E-01	-52.1597	23.6143
276	.	3.00000	0.307824E-01	0.126497E-01	0.154404E-01	-49.8403	22.0609
278	.	3.00000	0.336326E-01	0.129816E-01	0.180519E-01	-46.3261	39.0576
281	.	3.00000	0.414167E-01	0.213165E-01	0.442181E-01	6.76374	107.436
295	.	3.00000	0.156986E-01	0.923647E-02	0.879197E-02	-43.9951	-4.81250
300	.	3.00000	0.439185E-01	0.240075E-01	0.302322E-01	-31.1629	25.9281
304	.	3.00000	0.136150E-01	0.111152E-01	0.814492E-02	-40.1767	-26.7224
313	.	3.00000	0.294833E-01	0.601504E-01	0.186261E-01	-36.8248	-69.0341
315	.	3.00000	0.382841E-01	0.451023E-01	0.212783E-01	-44.4201	-52.8222
317	.	3.00000	0.274729E-01	0.185657E-01	0.159073E-01	-42.0984	-14.3189
319	.	3.00000	0.781980E-02	0.464077E-02	0.564034E-02	-27.8711	21.5388
321	.	3.00000	0.100939	0.475777E-01	0.385627E-01	-61.7961	-18.9480
330	.	3.00000	0.153269E-01	0.191447E-01	0.840806E-02	-45.1417	-56.0816
332	.	3.00000	0.223622E-01	0.117638E-01	0.109609E-01	-50.9849	-6.82580
337	.	3.00000	0.304465E-01	0.117744E-01	0.776647E-02	-74.4914	-34.0393
338	.	3.00000	0.350944E-01	0.108323E-01	0.157866E-01	-55.0167	45.7369
339	.	3.00000	0.258003E-01	0.208768E-01	0.145061E-01	-43.7756	-30.5159
341	.	3.00000	0.685662E-02	0.318017E-02	0.231511E-02	-66.2355	-27.2018
342	.	3.00000	0.200945E-01	0.855248E-02	0.983647E-02	-51.0490	15.0130
343	.	3.00000	0.449335E-01	0.220442E-01	0.285381E-01	-36.4881	29.4586
351	.	3.00000	0.423852E-01	0.155984E-01	0.144414E-01	-65.9282	-7.41726
352	.	3.00000	0.208272E-01	0.435781E-01	0.660505E-02	-68.2864	-84.8432
355	.	3.00000	0.351998E-01	0.104614E-01	0.115947E-01	-67.0604	10.8329
133	.	5.00000	1.61382	0.922744	0.538998	-66.6012	-41.5875

ID NO.		IDT	UGSH	ASH	SASKSH	CGESASKU	CGESASKS
334	.	5.00000	0.775541	0.454896	0.469263	-39.4922	3.15828
255	.	5.00000	0.513298	0.641965	0.444173	-13.4667	-30.8103
235	.	5.00000	0.815146	0.570039	0.424305	-47.9474	-25.5656
340	.	5.00000	0.781221	0.489988	0.402833	-48.4354	-17.7871
299	.	5.00000	0.624372	0.324552	0.346686	-44.4745	6.81992
314	.	5.00000	0.470371	0.522420	0.804244E-01	-82.9019	-84.6054
118	.	5.00000	0.881011	0.644508	0.436659	-50.4366	-32.2493
20	.	5.00000	0.781335	0.468854	0.500257	-35.9741	6.69775
348	.	5.00000	0.809841	0.492079	0.602428	-25.6116	22.4250
15	.	5.00000	0.671720	0.653581	0.619109	-7.83225	-5.27434
12	.	5.00000	1.15969	0.880602	0.536455	-53.7413	-39.0809
286	.	5.00000	0.810164	0.575093	0.285986	-64.7003	-50.2714
195	.	5.00000	0.502070	0.292407	0.479225	-4.55025	63.8897
349	.	5.00000	0.865017	0.387294	0.346779	-59.9107	-10.4610
226	.	5.00000	0.735006	0.697218	0.742794	1.05953	6.53677
243	.	5.00000	0.379218	0.230128	0.241820	-36.2319	5.08070
294	.	5.00000	1.00691	0.837347	0.366758	-63.5760	-56.2000
302	.	5.00000	1.83352	1.07400	1.21794	-33.5735	13.4023
323	.	5.00000	0.659710	0.553670	0.316649	-52.0017	-42.8090
49	.	5.00000	0.862008	0.631967	0.658791	-23.5749	4.24442
263	.	5.00000	0.450319	0.516961	0.626166	39.0493	21.1245
329	.	5.00000	1.00841	0.594937	0.541477	-46.3037	-8.98589
201	.	5.00000	0.576195	0.538161	0.410854	-28.6954	-23.6559
204	.	5.00000	0.294334	0.717097	0.397290	34.9790	-44.5975
222	.	5.00000	0.856283	0.484722	0.465941	-45.5856	-3.87456
193	.	5.00000	0.907967	0.539476	0.594931	-34.4766	10.2795
110	.	5.00000	0.935972	0.460061	0.569854	-39.1164	23.8648
198	.	5.00000	0.411083	0.254654	0.332607	-19.0900	30.6111
245	.	5.00000	1.03527	0.937403	0.953670	-7.88236	1.73540
53	.	6.00000	0.684920	0.319170	0.320595	-53.1924	0.446510
251	.	6.00000	0.499027	0.268629	0.331398	-33.5911	23.3663
312	.	6.00000	1.01906	0.470824	0.539180	-47.0907	14.5185
353	.	6.00000	0.798084	0.391975	0.301465	-62.2264	-23.0907
111	.	6.00000	0.732097	0.349354	0.354385	-51.5931	1.44024
1	.	6.00000	0.193272	0.110383	0.698078E-01	-63.8810	-36.7585
269	.	6.00000	1.21540	0.573077	0.590864	-51.3851	3.10383
296	.	6.00000	0.329427	0.207212	0.252142	-23.4605	21.6828
191	.	6.00000	0.623014	0.337022	0.494195	-20.6767	46.6359
258	.	6.00000	0.505051	0.268502	0.166759	-66.9816	-37.8925
336	.	6.00000	0.992193	0.412139	0.267766	-73.0127	-35.0303
36	.	6.00000	0.739067	0.426985	0.410015	-44.5227	-3.97440
305	.	6.00000	0.654063	0.432727	0.783832	19.8404	81.1377
346	.	6.00000	0.761325	0.477455	0.464805	-38.9478	-2.64937
287	.	6.00000	0.836490	0.564552	0.479983	-42.6194	-14.9799
290	.	6.00000	0.245868	0.141368	0.949611E-01	-61.4178	-32.8976
246	.	6.00000	0.170626	0.134413	0.948750E-01	-44.3958	-29.4152
107	.	6.00000	0.248756	0.210172	0.156883	-36.9331	-25.3551
		1	2	3	4	5	6

Appendix G

Comparison of Grant Shares Based on New Alberta Formula With Existing Grant Shares for Individual Alberta Municipalities

Legend:

ID NO. = Identification number: see Appendix H for conversion from municipality name to ID NO.

IDT = Municipality type:

- 1 = City
- 2 = Town
- 3 = Village
- 5 = County
- 6 = Municipal District

UGSH = Percentage share of 1977 unconditional grants for all municipalities.

ASH = Percentage share of total grants for all municipalities.

NEWSH = Percentage share of funds based on new Alberta formula (fiscal capacity component).

CGENUSHU = Percentage change in NEWSH from UGSH.

CGENEWSH = Percentage change in NEWSH from ASH.

ID NO.		IDT	UGSH	ASH	NEWSH	CGENUSHU	CGENEWSH
46	.	1.00000	10.0474	23.0685	14.0456	-26.2596	-39.1132
48	.	1.00000	0.506727	0.347312	1.03139	103.540	196.963
92	.	1.00000	0.155756	0.165162	0.414087	165.856	150.716
98	.	1.00000	17.5844	27.8270	12.9748	-26.2141	-53.3735
132	.	1.00000	0.876456	0.931543	0.474451	-45.8671	-49.0683
203	.	1.00000	1.79360	2.11307	1.11127	-38.0424	-47.4097
217	.	1.00000	1.45531	3.81767	2.37690	63.3264	-37.7395
262	.	1.00000	1.61740	1.16826	2.55194	57.7807	118.439
347	.	1.00000	0.356074	0.426262	0.226568	-36.3707	-46.8478
3	.	2.00000	0.114715	0.730613E-01	0.210876E-01	-81.6174	-71.1371
11	.	2.00000	0.120692	0.577242E-01	0.440645E-01	-63.4902	-23.6637
14	.	2.00000	0.105026	0.101943	0.652057E-01	-37.9146	-36.0374
16	.	2.00000	0.270441E-01	0.170445E-01	0.183173E-01	-32.2687	7.46765
17	.	2.00000	0.615899E-01	0.443004E-01	0.241412E-01	-60.8033	-45.5056
21	.	2.00000	0.820864E-01	0.465862E-01	0.163458	99.1294	250.872
30	.	2.00000	0.100149	0.372478E-01	0.219689	119.362	489.803
33	.	2.00000	0.234101	0.928806E-01	0.333237	42.3474	258.779
35	.	2.00000	0.191004	0.126287	0.770252E-01	-59.6736	-39.0080
39	.	2.00000	0.691202E-01	0.287857E-01	0.466675E-01	-32.1942	62.8150
43	.	2.00000	0.319343	0.317723	0.653819	104.739	105.783
47	.	2.00000	0.677690E-01	0.532853E-01	0.597032E-01	-31.9769	12.0444
50	.	2.00000	0.952314E-01	0.815729E-01	0.480280E-01	-49.5671	-41.1227
52	.	2.00000	0.200749	0.998108E-01	0.192780	-3.96971	93.1449
56	.	2.00000	0.837287E-01	0.474588E-01	0.114020	36.1773	140.250
58	.	2.00000	0.672814E-01	0.876968E-01	0.327629E-01	-51.3047	-62.6407
65	.	2.00000	0.373222	0.297491	0.132808	-64.4160	-55.3574
69	.	2.00000	0.258963	0.761697E-01	0.210291	-18.7950	176.082
70	.	2.00000	0.116374	0.367346E-01	0.315179E-01	-73.0325	-14.2010
71	.	2.00000	0.118584	0.605786E-01	0.683539E-01	-42.3581	12.8349
72	.	2.00000	0.128659	0.516570E-01	0.378776	194.404	633.252
75	.	2.00000	0.624905E-01	0.295947E-01	0.136527	118.476	361.320
82	.	2.00000	0.461219E-01	0.185704E-01	0.160051E-01	-65.2982	-13.8141
86	.	2.00000	0.165999	0.152328	0.614959E-01	-62.9541	-59.6292
88	.	2.00000	0.133739	0.108464	0.225638	68.7150	108.030
91	.	2.00000	0.379773	0.203574	0.249223	-34.3793	22.4237
95	.	2.00000	0.404071E-01	0.334671E-01	0.201844E-01	-50.6474	-39.6889
100	.	2.00000	0.266273	0.138306	0.107901	-59.4775	-21.9843
101	.	2.00000	0.558698E-01	0.301489E-01	0.220905E-01	-60.3544	-26.7288
106	.	2.00000	0.113916	0.623801E-01	0.106752	-6.28890	69.7706
108	.	2.00000	0.701530E-01	0.838867E-01	0.607202E-01	-13.3605	-27.5449
115	.	2.00000	0.237637	0.763161E-01	0.264738	27.3414	174.864
116	.	2.00000	2.42359	1.17428	0.416999	-62.7941	-64.4690
117	.	2.00000	0.408479	0.223656	0.193695	-62.6315	-13.3963
119	.	2.00000	0.826865E-01	0.989337E-01	0.360435E-01	-53.9908	-61.5464
126	.	2.00000	0.355250E-01	0.157465E-01	0.278650E-01	-21.5625	75.8433
130	.	2.00000	0.243434	0.115397	0.160829	-33.9333	39.3703
131	.	2.00000	0.258196	0.253459	0.451639	74.9205	73.1897

ID NO.		IDT	UGSH	ASH	NEWSH	CGENUSHU	CGENEWSH
135	.	2.00000	0.343939E-01	0.143802E-01	0.711532E-01	106.878	394.801
137	.	2.00000	0.135322	0.632838E-01	0.154207	13.9556	143.676
141	.	2.00000	0.167325	0.106064	0.707877E-01	-57.6945	-33.2593
143	.	2.00000	0.481018E-01	0.451351E-01	0.142457E-01	-70.3842	-68.4376
146	.	2.00000	0.931872E-01	0.164147	0.416139E-01	-55.3436	-74.6484
147	.	2.00000	0.191587	0.168860	0.596247E-01	-68.8785	-64.6899
148	.	2.00000	0.205893	0.796938E-01	0.890223E-01	-56.7629	11.7054
151	.	2.00000	0.291974	0.193091	0.162428	-44.3690	-15.8802
180	.	2.00000	0.155451	0.136038	0.939038E-01	-39.5926	-30.9723
184	.	2.00000	0.118602E-01	0.239668E-01	0.266723E-01	124.890	11.2885
188	.	2.00000	0.452515E-01	0.235704E-01	0.218072E-01	-51.8089	-7.48074
192	.	2.00000	0.107601	0.143512	0.192379	78.7891	34.0503
194	.	2.00000	0.197734	0.125777	0.153595	-22.3225	22.1164
197	.	2.00000	0.523226E-01	0.577791E-01	0.274908E-01	-47.4589	-52.4208
200	.	2.00000	0.486945	0.277286	0.821082	68.6189	196.114
211	.	2.00000	0.137361	0.444877E-01	0.229243	66.8905	415.295
212	.	2.00000	0.909624E-01	0.107476	0.109157	20.0024	1.56403
215	.	2.00000	0.767005E-01	0.777956E-01	0.311890E-01	-59.3367	-59.9091
216	.	2.00000	0.117579	0.547782E-01	0.299731	154.918	447.172
218	.	2.00000	0.413577E-01	0.728345E-01	0.163051E-01	-60.5755	-77.6135
224	.	2.00000	0.171569	0.991926E-01	0.560446E-01	-67.3341	-43.4992
227	.	2.00000	0.403445E-01	0.207001E-01	0.306100E-01	-24.1286	47.8734
232	.	2.00000	0.774438E-01	0.337574E-01	0.894355E-01	15.4842	164.935
238	.	2.00000	0.160213	0.856259E-01	0.470630E-01	-70.6248	-45.0366
239	.	2.00000	0.139171	0.245661	0.860981E-01	-38.1352	-64.9524
241	.	2.00000	0.709053E-01	0.440593E-01	0.259592E-01	-63.3889	-41.0813
247	.	2.00000	0.175854	0.220409	0.101474	-42.2968	-53.9612
249	.	2.00000	0.418938E-01	0.471198E-01	0.251339E-01	-40.0058	-46.6597
250	.	2.00000	0.349320	0.157415	0.430118	23.1302	173.238
254	.	2.00000	0.313189	0.264537	0.126531	-59.5991	-52.1689
257	.	2.00000	0.674601E-01	0.645931E-01	0.384024E-01	-43.0739	-40.5473
260	.	2.00000	0.396279E-01	0.254874E-01	0.797508E-01	101.249	212.902
261	.	2.00000	0.209233	0.798094E-01	0.412986	97.3806	417.466
264	.	2.00000	0.136146	0.689992E-01	0.835506E-01	-38.6316	21.0892
265	.	2.00000	0.107910	0.828918E-01	0.408510E-01	-62.1434	-50.7176
266	.	2.00000	0.102242	0.482469E-01	0.157593	54.1379	226.639
268	.	2.00000	0.174318	0.119022	0.122221	-29.8863	2.68717
280	.	2.00000	0.917147E-01	0.404673E-01	0.855007E-01	-6.77532	111.284
284	.	2.00000	0.124143	0.118762	0.116268	-6.34342	-2.10038
285	.	2.00000	0.102787	0.777225E-01	0.132471	28.8790	70.4405
289	.	2.00000	0.859999E-01	0.542619E-01	0.693791E-01	-19.3266	27.8595
291	.	2.00000	0.312590	0.219117	0.542344	73.5001	147.513
292	.	1.00000	1.12129	0.945146	2.71591	142.213	187.353
293	.	2.00000	0.210447	0.216739	0.105656	-49.7945	-51.2521
297	.	2.00000	0.292081E-01	0.153047E-01	0.256856E-01	-12.0600	67.8292
298	.	2.00000	0.307136	0.241016	0.101480	-66.9592	-57.8949
301	.	2.00000	0.102987	0.148375	0.757253E-01	-26.4709	-48.9635
303	.	2.00000	0.105546	0.446669E-01	0.973804E-01	-7.73643	118.015
307	.	2.00000	0.104540	0.485614E-01	0.134709	28.8587	177.399
309	.	2.00000	0.911321E-01	0.816659E-01	0.256630	181.603	214.244

ID NO.		IDT	UGSH	ASH	NEWSH	CGENUSHU	CGENEWSH
310	.	2.00000	0.117034	0.761309E-01	0.496834E-01	-57.5480	-34.7395
311	.	2.00000	0.200652	0.162260	0.365566	82.1891	125.297
316	.	2.00000	0.546600E-01	0.434377E-01	0.441784E-01	-19.1759	1.70536
318	.	2.00000	0.100344	0.711123E-01	0.815669E-01	-18.7126	14.7015
320	.	2.00000	0.356644E-01	0.484735E-01	0.155470E-01	-56.4075	-67.9268
322	.	2.00000	0.447012E-01	0.419446E-01	0.623191E-01	39.4128	48.5750
325	.	2.00000	0.169349	0.748867E-01	0.432536E-01	-60.4443	-42.2414
326	.	2.00000	0.332985E-01	0.375004E-01	0.206188E-01	-36.0788	-45.0170
327	.	2.00000	0.185361	0.384674	0.920041E-01	-50.3649	-76.0826
328	.	2.00000	0.174212	0.108541	0.210375	20.7579	93.8206
331	.	2.00000	0.670919E-01	0.293743E-01	0.113540	69.2302	286.528
333	.	2.00000	0.187100	0.965911E-01	0.579493E-01	-69.0276	-40.0056
335	.	2.00000	0.260250	0.195843	0.168815	-35.1335	-13.8010
345	.	2.00000	0.197902	0.941862E-01	0.963598E-01	-51.3093	2.30780
350	.	2.00000	0.182840	0.146080	0.884845E-01	-51.6054	-39.4273
2	.	3.00000	0.162132E-01	0.124556E-01	0.860703E-02	-46.9135	-30.8983
5	.	3.00000	0.532840E-01	0.216081E-01	0.881233E-01	65.3841	307.826
6	.	3.00000	0.150177E-01	0.786289E-02	0.493353E-02	-67.1486	-37.2585
7	.	3.00000	0.849706E-02	0.505823E-02	0.598190E-02	-29.6004	18.2607
8	.	3.00000	0.259486E-01	0.268893E-01	0.105981E-01	-59.1575	-60.5863
10	.	3.00000	0.947275E-02	0.591491E-02	0.361787E-02	-61.8076	-38.8347
13	.	3.00000	0.212310E-01	0.101418E-01	0.224148E-01	5.57556	121.013
18	.	3.00000	0.121729E-01	0.745579E-02	0.125731E-01	3.28760	68.6349
19	.	3.00000	0.436590E-01	0.202702E-01	0.405072E-01	-11.2833	99.8358
22	.	3.00000	0.264508E-01	0.370115E-01	0.911852E-02	-65.5265	-75.3631
23	.	3.00000	0.116773	0.895398E-01	0.395043	238.299	341.193
24	.	3.00000	0.448566E-01	0.280082E-01	0.516180E-01	15.0731	84.2960
25	.	3.00000	0.610502E-01	0.222923E-01	0.443974E-01	-27.2773	99.1604
27	.	3.00000	0.396351E-01	0.177272E-01	0.765453E-01	93.1250	331.795
29	.	3.00000	0.617399E-02	0.182834E-02	0.777565E-02	25.9419	325.285
31	.	3.00000	0.968326E-01	0.767344E-01	0.843610E-01	-12.8795	9.93891
32	.	3.00000	0.109095E-01	0.817676E-02	0.466651E-02	-57.2251	-42.9296
34	.	3.00000	0.403838E-01	0.160474E-01	0.232304E-01	-42.4761	44.7606
38	.	3.00000	0.155699E-01	0.455168E-02	0.816226E-02	-47.5767	79.3241
40	.	3.00000	0.595527E-01	0.259743E-01	0.168677E-01	-71.6761	-35.0602
41	.	3.00000	0.327213E-01	0.220959E-01	0.102104E-01	-68.7959	-53.7905
42	.	3.00000	0.404142E-01	0.152893E-01	0.344685E-01	-14.7120	125.442
44	.	3.00000	0.306949E-01	0.287777E-01	0.545695E-01	77.7804	89.6239
45	.	3.00000	0.150874E-01	0.953657E-02	0.322563E-01	246.357	447.957
51	.	3.00000	0.279804E-01	0.307663E-01	0.105422E-01	-62.3231	-65.7347
54	.	3.00000	0.227232E-01	0.396281E-01	0.395672E-01	74.1269	-0.153762
55	.	3.00000	0.215491E-01	0.188982E-01	0.786395E-01	265.163	316.386
59	.	3.00000	0.116832E-01	0.818733E-02	0.122778E-01	5.08928	49.9615
60	.	3.00000	0.133219E-01	0.456411E-02	0.612799E-02	-54.0006	34.2648
61	.	3.00000	0.241331E-01	0.181970E-01	0.713399E-02	-70.5001	-60.7957
62	.	3.00000	0.334021E-01	0.131319E-01	0.769637E-02	-76.9584	-41.2575
63	.	3.00000	0.877047E-02	0.254206E-02	0.796417E-03	-90.9193	-68.6705
64	.	3.00000	0.169987E-01	0.101646E-01	0.352778E-01	108.884	247.065
66	.	3.00000	0.203787E-01	0.104842E-01	0.254863E-01	25.0637	143.093
67	.	3.00000	0.666005E-02	0.498965E-02	0.186194E-02	-72.0432	-62.6941

ID NO.		IDT	UGSH	ASH	NEWSH	CGENUSHU	CGLNEWSH
68	.	3.00000	0.202786E-01	0.958360E-02	0.273494E-01	34.8683	185.377
73	.	3.00000	0.436504E-01	0.272874E-01	0.148214E-01	-66.0451	-45.0839
76	.	3.00000	0.230841E-01	0.120489E-01	0.549856E-02	-76.1803	-54.3645
77	.	3.00000	0.235738E-01	0.691816E-02	0.282114E-01	19.6729	307.788
78	.	3.00000	0.120192E-01	0.706318E-02	0.556156E-02	-53.7277	-21.2599
79	.	3.00000	0.571617E-01	0.683231E-01	0.216400E-01	-62.1425	-68.3270
81	.	3.00000	0.172675E-01	0.705107E-02	0.309872E-01	79.4536	339.469
83	.	3.00000	0.173569E-01	0.101817E-01	0.431988E-01	148.886	324.278
84	.	3.00000	0.149034E-01	0.116656E-01	0.437206E-02	-70.6639	-62.5218
85	.	3.00000	0.979619E-02	0.299216E-02	0.382126E-02	-60.9924	27.7094
87	.	3.00000	0.157415E-01	0.671254E-02	0.679850E-02	-56.8115	1.28059
89	.	3.00000	0.164723E-01	0.131925E-01	0.463535F-02	-71.8598	-64.8638
90	.	3.00000	0.216760E-01	0.673377E-02	0.161758E-01	-25.3748	140.218
93	.	3.00000	0.196621E-01	0.118987E-01	0.202479E-01	2.97918	70.1686
94	.	3.00000	0.248690E-01	0.211388E-01	0.113834E-01	-54.2633	-46.1493
96	.	3.00000	0.134452E-01	0.630803E-02	0.109292E-01	-18.7128	73.2589
97	.	3.00000	0.201017E-01	0.117412E-01	0.292283F-01	45.4021	148.937
102	.	3.00000	0.204859E-01	0.109220E-01	0.796411E-02	-61.1239	-27.0817
103	.	3.00000	0.453677E-01	0.269657E-01	0.397086E-01	-12.4739	47.2561
104	.	3.00000	0.338953E-01	0.167633E-01	0.390506E-01	15.2093	132.952
105	.	3.00000	0.470099E-01	0.266438E-01	0.240105E-01	-48.9246	-9.88333
109	.	3.00000	0.192868E-01	0.562900E-02	0.190192E-01	-1.38745	237.879
112	.	3.00000	0.350622E-01	0.253533E-01	0.126327E-01	-63.9706	-50.1733
113	.	3.00000	0.509574E-01	0.223156E-01	0.212202E-01	-58.3570	-4.90866
114	.	3.00000	0.176392E-01	0.355293E-01	0.332482E-01	88.4902	-6.42036
120	.	3.00000	0.178394E-01	0.962804E-02	0.519685E-02	-70.8686	-46.0238
121	.	3.00000	0.348460E-02	0.439733E-02	0.112864E-02	-67.6107	-74.3336
122	.	3.00000	0.132129E-01	0.499815E-02	0.475753E-02	-63.9933	-4.81419
124	.	3.00000	0.821007E-01	0.354893E-01	0.188946	130.139	432.403
125	.	3.00000	0.167815E-01	0.904100E-02	0.721358E-02	-57.0146	-20.2126
127	.	3.00000	0.492312E-01	0.265037E-01	0.318403E-01	-35.3249	20.1351
128	.	3.00000	0.156092E-01	2.07743	0.530510E-02	-66.0131	-99.7446
136	.	3.00000	0.175499E-01	0.364928F-01	0.790049E-02	-54.9826	-78.3505
139	.	3.00000	0.659751E-02	0.422175E-02	0.554280E-02	-15.9865	31.2914
140	.	3.00000	0.165384E-01	0.683084E-02	0.113958E-01	-31.0949	66.8292
144	.	3.00000	0.175266E-01	0.910025E-02	0.193091E-01	10.1696	112.181
145	.	3.00000	0.121800E-01	0.795975E-02	0.484758E-02	-60.2006	-39.0988
149	.	3.00000	0.155431E-01	0.564143E-02	0.344954E-01	121.934	511.466
150	.	3.00000	0.222550E-01	0.500096E-01	0.132641E-01	-40.3993	-73.4768
152	.	3.00000	0.272800E-01	0.116445E-01	0.876867E-02	-67.8567	-24.6969
153	.	3.00000	0.135703E-01	0.655146E-02	0.633853E-02	-53.2911	-3.25018
154	.	3.00000	0.118476E-01	0.141335E-01	0.373366E-02	-68.4861	-73.5829
155	.	3.00000	0.341848E-01	0.427355E-01	0.333939E-01	-2.31354	-21.8589
181	.	3.00000	0.182915E-01	0.783544E-02	0.208245E-01	13.8480	165.773
182	.	3.00000	0.279030E-01	0.129343E-01	0.390159E-01	39.8418	201.647
183	.	3.00000	0.163901E-01	0.239735E-01	0.260186E-01	58.7458	8.53071
189	.	3.00000	0.260791E-01	0.165891E-01	0.454470E-01	74.2661	173.957
190	.	3.00000	0.320583E-01	0.169176E-01	0.415921E-01	29.7389	145.652
199	.	3.00000	0.614540E-02	0.192425E-01	0.716167E-02	16.5369	-62.7821
202	.	3.00000	0.743471E-01	0.705687E-01	0.313658E-01	-57.8116	-55.5527

ID NO.		TOT	UCSH	ASH	NEWSH	CGLNUSHU	CGENEWSH
205	.	3.00000	0.180431E-01	0.118840E-01	0.540783E-02	-70.0282	-54.4948
207	.	3.00000	0.110524E-01	0.492719E-02	0.428697E-02	-61.2125	-12.9936
208	.	3.00000	0.162132E-01	0.114284E-01	0.493072E-02	-69.5883	-56.8556
209	.	3.00000	0.203054E-01	0.201640E-01	0.161447E-01	-20.4906	-19.9332
213	.	3.00000	0.455803E-01	0.132681E-01	0.164649E-01	-63.8772	24.0935
214	.	3.00000	0.189241E-01	0.812963E-02	0.938668E-02	-50.3982	15.4625
219	.	3.00000	0.741612E-01	0.287714E-01	0.914996E-01	23.3792	218.022
220	.	3.00000	0.822902E-02	0.536071E-02	0.122597E-02	-85.1019	-77.1104
221	.	3.00000	0.929584E-02	0.275338E-02	0.981934E-02	5.63145	256.628
223	.	3.00000	0.414810E-01	0.403132E-01	0.623989E-01	50.4275	54.7652
225	.	3.00000	0.123587E-01	0.479667E-02	0.608778E-02	-50.7410	26.9167
228	.	3.00000	0.513398E-02	0.140601E-01	0.115396E-01	124.768	-17.9268
229	.	3.00000	0.313096E-01	0.189026E-01	0.202045E-01	-35.4685	6.88734
231	.	3.00000	0.201464E-01	0.167415E-01	0.701407E-02	-65.1844	-58.1036
233	.	3.00000	0.189258E-01	0.552438E-02	0.306999E-01	62.2114	455.717
234	.	3.00000	0.114599E-01	0.787791E-02	0.593409E-02	-48.2185	-24.6743
236	.	3.00000	0.242385E-01	0.116589E-01	0.934745E-02	-61.4356	-19.8256
240	.	3.00000	0.289258E-01	0.159682E-01	0.105478E-01	-63.5349	-33.9448
244	.	3.00000	0.119995E-01	0.231456E-01	0.163985E-01	36.6593	-29.1508
248	.	3.00000	0.555692E-01	0.288901E-01	0.870990E-01	56.6832	201.484
252	.	3.00000	0.200159E-01	0.121413E-01	0.232882E-01	16.3486	91.8099
259	.	3.00000	0.850778E-02	0.513032E-02	0.405791E-02	-52.3036	-20.9034
270	.	3.00000	0.153841E-01	0.449781E-02	0.631553E-02	-58.9476	40.4132
271	.	3.00000	0.968540E-02	0.560828E-02	0.185559E-01	91.5864	230.866
272	.	3.00000	0.140510E-01	0.596701E-02	0.171422E-01	22.0000	187.283
274	.	3.00000	0.477301E-02	0.775050E-02	0.197677E-02	-58.5844	-74.4949
275	.	3.00000	0.504517E-01	0.195254E-01	0.444705E-01	-11.8552	127.757
276	.	3.00000	0.307824E-01	0.126497E-01	0.111577E-01	-63.7531	-11.7950
278	.	3.00000	0.336326E-01	0.129816E-01	0.341749E-01	1.61228	163.256
281	.	3.00000	0.414167E-01	0.213165E-01	0.432346E-01	4.38910	102.622
295	.	3.00000	0.156986E-01	0.923647E-02	0.716151E-02	-54.3811	-22.4649
300	.	3.00000	0.439155E-01	0.240075E-01	0.110143	150.791	358.788
304	.	3.00000	0.136150E-01	0.111152E-01	0.176840E-01	29.8862	59.0977
313	.	3.00000	0.294833E-01	0.601504E-01	0.125766E-01	-57.3432	-79.0914
315	.	3.00000	0.382841E-01	0.451023E-01	0.133650E-01	-65.0899	-70.3673
317	.	3.00000	0.274729E-01	0.185657E-01	0.478344E-01	74.1144	157.650
319	.	3.00000	0.731930E-02	0.464077E-02	0.495417E-02	-36.6459	6.75316
321	.	3.00000	0.100339	0.475777E-01	0.250082E-01	-75.2245	-47.4372
330	.	3.00000	0.153269E-01	0.191447E-01	0.704094E-02	-54.0615	-63.2225
332	.	3.00000	0.223622E-01	0.117638E-01	0.848278E-02	-62.0665	-27.8910
337	.	3.00000	0.304465E-01	0.117744E-01	0.142303E-01	-53.2613	20.8577
338	.	3.00000	0.350944E-01	0.108323E-01	0.133693E-01	-61.9046	23.4215
339	.	3.00000	0.258003E-01	0.208768E-01	0.104998E-01	-59.3038	-49.7061
341	.	3.00000	0.685662E-02	0.318017E-02	0.189998E-02	-72.2898	-40.2553
342	.	3.00000	0.200945E-01	0.855248E-02	0.136031E-01	-32.3045	59.0544
343	.	3.00000	0.449335E-01	0.220442E-01	0.940010E-01	109.200	326.421
351	.	3.00000	0.423852E-01	0.155984E-01	0.249775E-01	-41.0704	60.1287
352	.	3.00000	0.208272E-01	0.435781E-01	0.603597E-02	-71.0188	-86.1491
355	.	3.00000	0.351998E-01	0.104614E-01	0.386053E-01	9.67474	269.026
133	.	5.00000	1.61382	0.922744	0.299422	-81.4464	-67.5509

ID NO.		IDT	UGSH	ASH	NEWSH	CGENUSHU	CGENEWSH
334	.	5.00000	0.775541	0.454896	0.751735E-01	-90.1760	-83.2547
255	.	5.00000	0.313278	0.641965	2.34412	356.679	265.148
235	.	5.00000	0.813145	0.570039	0.124488	-84.7281	-76.1614
340	.	5.00000	0.781221	0.489986	0.944306E-01	-87.9124	-80.7280
299	.	5.00000	0.624372	0.324552	0.104967	-83.1884	-67.6578
314	.	5.00000	0.470371	0.522420	0.678584E-01	-85.5734	-87.0108
116	.	5.00000	0.861011	0.644508	0.712894E-01	-91.9062	-88.9389
20	.	5.00000	0.781335	0.468854	0.326679	-57.9337	[illegible]
348	.	5.00000	0.839841	0.492079	2.34392	189.429	376.329
15	.	5.00000	0.671720	0.653591	2.37086	252.954	262.750
12	.	5.00000	1.15969	0.880602	2.62277	126.162	197.538
286	.	5.00000	0.810164	0.575093	1.12067	38.3262	94.8674
195	.	5.00000	0.502070	0.292407	0.993656	97.9117	239.820
349	.	5.00000	0.865017	0.387294	0.819691E-01	-90.5240	-76.0354
226	.	5.00000	0.735006	0.697218	0.173131	-76.4450	-75.1683
243	.	5.00000	0.379218	0.230128	0.363297E-01	-90.4198	-84.2133
294	.	5.00000	1.00691	0.837347	2.40173	138.524	186.826
302	.	5.00000	1.83352	1.07400	1.12249	-38.7794	4.51469
323	.	5.00000	0.659710	0.553670	0.358235	-45.6981	-35.2981
49	.	5.00000	0.862003	0.631967	0.777928	-9.75395	23.0963
263	.	5.00000	0.450319	0.516961	2.69454	498.361	421.226
329	.	5.00000	1.00841	0.594937	0.594006	-41.0945	-0.156486
201	.	5.00000	0.576195	0.538161	0.267860	-53.5123	-50.2268
204	.	5.00000	0.294334	0.717097	3.40638	1057.32	375.023
222	.	5.00000	0.856283	0.484722	0.165665	-80.6530	-65.8227
193	.	5.00000	0.907967	0.539476	2.73875	201.635	407.668
110	.	5.00000	0.935972	0.460061	0.966586E-01	-89.6729	-78.9901
198	.	5.00000	0.411083	0.254654	1.00586	144.686	294.990
245	.	5.00000	1.03527	0.937403	0.358407	-65.3805	-61.7659
53	.	6.00000	0.684920	0.319170	0.541267	-20.9737	69.5859
251	.	6.00000	0.499027	0.268629	0.451709E-01	-90.9482	-83.1847
312	.	6.00000	1.01906	0.470824	1.41485	38.8379	200.505
353	.	6.00000	0.798084	0.391975	0.114444	-85.6601	-70.8032
111	.	6.00000	0.732097	0.349354	0.190780	-73.9405	-45.3904
1	.	6.00000	0.193272	0.110383	0.117605E-01	-93.9151	-89.3457
269	.	6.00000	1.21540	0.573077	0.323076	-73.4181	-43.6243
296	.	6.00000	0.329427	0.207212	0.412950E-01	-87.4646	-80.0712
191	.	6.00000	0.623014	0.337022	0.136301	-78.1223	-59.5571
258	.	6.00000	0.505051	0.268502	0.368536E-01	-92.7030	-86.2744
336	.	6.00000	0.992193	0.412139	0.103893	-89.5289	-74.7917
36	.	6.00000	0.739067	0.426985	5.37923	627.840	1159.82
305	.	6.00000	0.654063	0.432727	3.83276	485.992	785.721
346	.	6.00000	0.761325	0.477455	2.42774	218.883	408.475
287	.	6.00000	0.836490	0.564552	1.01050	20.8018	78.9904
290	.	6.00000	0.245868	0.141368	0.182774	-25.6619	29.2894
246	.	6.00000	0.170626	0.134413	0.398965E-01	-76.6175	-70.3179
107	.	6.00000	0.248756	0.210172	0.127014	-48.9402	-39.5664
		1	2	3	4	5	6

Appendix H

Identification Numbers for Municipalities in Appendices A through G

Name	ID No.	
Cities (IDT = 1)		
Calgary	46	
Camrose	48	
Drumheller	92	
Edmonton	98	
Grande Prairie	132	
Lethbridge	203	
Medicine Hat	217	
Red Deer	262	
St. Albert	292	(listed under Towns, IDT = 2)
Wetaskiwin	347	
Towns (IDT = 2)		
Airdrie	3	
Athabasca	11	
Barrhead	14	
Bashaw	16	
Bassano	17	
Beaverlodge	21	
Black Diamond	30	
Blairmore	33	
Bonnyville	35	
Bow Island	39	
Brooks	43	
Calmar	47	
Canmore	50	
Cardston	52	
Carstairs	56	
Castor	58	
Claresholm	65	
Coaldale	69	
Cochrane	70	
Cold Lake	71	
Coleman	72	
Coronation	75	
Daysland	82	
Devon	86	
Didsbury	88	
Drayton Valley	91	
Eckville	95	
Edson	100	
Elk Point	101	

Towns (IDT = 2) (Con'td.)	ID No.
Fairview	106
Falher	108
Fort Macleod	115
Fort McMurray	116
Fort Saskatchewan	117
Fox Creek	119
Gleichen	126
Grand Centre	130
Grande Cache	131
Granum	135
Grimshaw	137
Hanna	141
Hardisty	143
High Level	146
High Prairie	147
High River	148
Hinton	151
Innisfail	180
Irvine	184
Killam	188
Lac La Biche	192
Lacombe	194
Lamont	197
Leduc	200
Magrath	211
Manning	212
Mayerthorpe	215
McLennan	216
Milk River	218
Morinville	224
Mundare	227
Nanton	232
Okotoks	238
Olds	239
Oyen	241
Peace River	247
Picture Butte	249
Pincher Creek	250
Ponoka	254
Provost	257
Rainbow Lake	260
Raymond	261
Redcliff	264
Redwater	265
Rimbey	266
Rocky Mountain House	268

Towns (IDT = 2) (Con'td)	ID No.
Sedgewick	280
Slave Lake	284
Smoky Lake	285
Spirit River	289
Spruce Grove	291
St. Paul	293
Stavely	297
Stettler	298
Stony Plain	301
Strathmore	303
Sundre	307
Swan Hills	309
Sylvan Lake	310
Taber	311
Three Hills	316
Tofield	318
Trochu	320
Two Hills	322
Valleyview	325
Vauxhall	326
Vegreville	327
Vermilion	328
Viking	331
Vulcan	333
Wainwright	335
Westlock	345
Whitecourt	350

Villages (IDT = 3)	
Acme	2
Alix	5
Alliance	6
Amisk	7
Andrew	8
Arrowwood	10
Barons	13
Bawlf	18
Beaumont	19
Beiseker	22
Bellevue	23
Bentley	24
Berwyn	25
Big Valley	27
Bittern Lake	29
Blackfalds	31
Blackie	32
Bon Accord	34

Villages (IDT = 3) (Con'td.)	ID No.
Botha	38
Bowden	40
Boyle	41
Breton	42
Bruderheim	44
Burdett	45
Carbon	51
Carmangay	54
Caroline	55
Cayley	59
Cereal	60
Champion	61
Chauvin	62
Chinook	63
Chipman	64
Clive	66
Cluny	67
Clyde	68
Consort	73
Coutts	76
Cowley	77
Cremona	78
Crossfield	79
Czar	81
Delburne	83
Delia	84
Derwent	85
Dewberry	87
Donalda	89
Donnelly	90
Duchess	93
Eaglesham	94
Edberg	96
Edgerton	97
Elnora	102
Empress	103
Entwistle	104
Evansburg	105
Ferintosh	109
Foremost	112
Forestburg	113
Fort Assiniboine	114
Frank	120
Gadsby	121
Galahad	122
Gibbons	124
Girouxville	125

Villages (IDT = 3) (Con'td.)	ID No.
Glendon	127
Glenwood	128
Grassy Lake	136
Hairy Hill	139
Halkirk	140
Hay Lakes	144
Heisler	145
Hillspring	149
Hines Creek	150
Holden	152
Hughenden	153
Hussar	154
Hythe	155
Innisfree	181
Irma	182
Irricana	183
Kinuso	189
Kitscoty	190
Lavoy	199
Legal	202
Linden	205
Lomond	207
Longview	208
Lougheed	209
Mannville	213
Marwayne	214
Millet	219
Milo	220
Minburn	221
Mirror	223
Morrin	225
Munson	228
Myrnam	229
Nampa	231
New Norway	233
New Sarepta	234
Nobleford	236
Onoway	240
Paradise Valley	244
Penhold	248
Plamondon	252
Radway	259
Rockyford	270
Rosalind	271
Rosemary	272
Rumsey	274
Rycroft	275
Ryley	276

Villages (IDT = 3) (Con'td.)	ID No.
Sangudo	278
Sexsmith	281
Standard	295
Stirling	300
Strome	304
Thorhild	313
Thorsby	315
Tilley	317
Torrington	319
Turner Valley	321
Veteran	330
Vilna	332
Wanham	337
Warburg	338
Warner	339
Warspite	341
Waskatenau	342
Wembley	343
Wildwood	351
Willingdon	352
Youngstown	355

Counties (IDT = 5)	
No. 1 Grande Prairie	133
No. 2 Vulcan	334
No. 3 Ponoka	255
No. 4 Newell	235
No. 5 Warner	340
No. 6 Stettler	299
No. 7 Thorhild	314
No. 8 Forty Mile	118
No. 9 Beaver	20
No. 10 Wetaskiwin	348
No. 11 Barrhead	15
No. 12 Athabasca	12
No. 13 Smoky Lake	286
No. 14 Lacombe	195
No. 16 Wheatland	349
No. 17 Mountain View	226
No. 18 Paintearth	243
No. 19 St. Paul	294
No. 20 Strathcona	302
No. 21 Two Hills	323
No. 22 Camrose	49
No. 23 Red Deer	263
No. 24 Vermilion River	329
No. 25 Leduc	201
No. 26 Lethbridge	204
No. 27 Minburn	222

Counties (IDT = 5) (Con'td.)	ID No.
No. 28 Lac Ste. Anne	193
No. 29 Flagstaff	110
No. 30 Lamont	198
No. 31 Parkland	245
Municipal Districts (IDT = 6)	
No. 6 Cardston	53
No. 9 Pincher Creek	251
No. 14 Taber	312
No. 26 Willow Creek	353
No. 31 Foothills	111
No. 34 Acadia	1
No. 44 Rocky View	269
No. 47 Starland	296
No. 48 Kneehill	191
No. 52 Provost	258
No. 61 Wainwright	336
No. 87 Bonnyville	36
No. 90 Sturgeon	305
No. 92 Westlock	346
No. 130 Smoky River	287
No. 133 Spirit River	290
No. 135 Peace	246
No. 136 Fairview	107

APPENDIX I

Comparison of Shares Per Capita Explained By Theoretical Criteria

(Urban and Rural Combined)

Dependent Variable (Logarthim of Share Per Capita)		CONSTANT	Coefficients of Independent Variables: LOG(EXPPC)	LOG(EAPC)	LOG(AEAPC)	LOG(AITR)	R^2
UGSH	(1)	-11.5505	0.2552	0.0945*	n/a	n/a	0.0904
	(2)	-11.8631	0.1414	n/a	0.2146	n/a	0.1340
	(3)	- 9.3733	0.3099	n/a	n/a	-0.1852*	0.0870
ASH	(4)	-13.0322	0.3784	0.1515*	n/a	n/a	0.1069
	(5)	-13.0816	0.2956	n/a	0.2144	n/a	0.1254
	(6)	- 9.6910	0.4658	n/a	n/a	-0.2812*	0.1022
USSH	(7)	0.1227*	0.3678	-1.5421	n/a	n/a	0.3990
	(8)	- 3.0753	0.3941	n/a	-1.1120	n/a	0.3999
	(9)	0.1384*	-0.4517	n/a	n/a	-0.7568*	0.0592
INDEXSH	(10)	- 7.5445	1.0000	-1.0000	n/a	n/a	1.0000
	(11)	- 9.7917	0.9788	n/a	-0.6764	n/a	0.9033
	(12)	- 7.4542	0.4688	n/a	n/a	-0.4993	0.2726
MAG77SH	(13)	- 7.4789	0.5530	-0.6646	n/a	n/a	0.0555
	(14)	-10.5326	0.1948*	n/a	-0.0017*	n/a	0.0068
	(15)	8.8234*	0.2337*	n/a	n/a	-2.0593	0.0463
MIG77SH	(16)	-12.5049	0.3008	0.1481*	n/a	n/a	0.0851
	(17)	-13.1203	0.0948*	n/a	0.3723	n/a	0.1641
	(18)	- 3.9631*	0.3973	n/a	n/a	-0.8360	0.0972
SASKSH	(19)	-12.1725	0.4116	-0.2534*	n/a	n/a	0.2036
	(20)	-12.7007	0.2963	n/a	0.1483	n/a	0.2344
	(21)	- 7.1592	0.4207	n/a	n/a	-0.5345	0.2213
NEWSH	(22)	- 2.3478	0.4299	-1.3127	n/a	n/a	0.2807
	(23)	- 6.7380	0.0844*	n/a	-0.4745	n/a	0.0844
	(24)	9.9806	-0.2421	n/a	n/a	-1.9540	0.0683

*denotes insignificant coefficient at 5% level based on t-test.

APPENDIX J

Comparison of Shares Per Capita Explained by Theoretical Criteria

(Urban Municipalities)

Dependent Variable (Logarithm of Share Per Capita)		CONSTANT	Coefficients of Independent Variables: LOG(EXPPC)	LOG(EAPC) or LOG(AEAPC)	LOG(AITR)	R^2
UGSH	(1)	-5.2452	0.0429*	-0.5638	n/a	0.2003
	(2)	-9.1737	-0.0902*	n/a	0.0505*	0.0116
ASH	(3)	-9.4343	0.2189	-0.1959*	n/a	0.0203
	(4)	-11.1683	0.1719*	n/a	0.0568*	0.0134
USSH	(5)	-3.9258	0.4341	-1.0151	n/a	0.1361
	(6)	-9.7404	0.1972*	n/a	-0.0429*	0.0113
INDEXSH	(7)	-7.3785	1.0000	-1.0000	n/a	1.0000
	(8)	-9.6585	0.7744	n/a	-0.4093	0.5948
MAG77SH	(9)	10.2905	-0.0234*	-2.5655	n/a	0.7941
	(10)	8.7097*	-0.5927	n/a	-1.5042	0.1306
MIG77SH	(11)	-2.2588	-0.0427*	-0.9581	n/a	0.7162
	(12)	-3.1775*	-0.2561	n/a	-0.5268	0.1370
SASKSH	(13)	-7.2761	0.2266	-0.5143	n/a	0.2189
	(14)	-6.4920	0.1150	n/a	-0.4187	0.0377
NEWSH	(15)	6.6583	0.1681	-2.2956	n/a	0.6510
	(16)	0.3152	-0.3523	n/a	-0.8215*	0.0486

*denotes insignificant coefficient at 5% level based on t-test.

APPENDIX K

Comparison of Shares Per Capita Explained by Theoretical Criteria

(Rural Municipalities)

Dependent Variable (Logarithm of Share Per Capita)		CONSTANT	Coefficients of Independent Variables: LOG(EXPPC)	LOG(EAPC)	LOG(AEAPC)	LOG(AITR)	R^2
UGSH	(1)	-14.0853	1.9606	-0.6319	n/a	n/a	0.5831
	(2)	-14.2019	1.9686	n/a	-0.5851	n/a	0.5883
	(3)	- 7.9700*	1.5281	n/a	n/a	-0.9206*	0.5015
ASH	(4)	-11.4533	1.6006	-0.7004	n/a	n/a	0.4974
	(5)	-11.7395	1.5660	n/a	-0.6013	n/a	0.4778
	(6)	- 3.3824*	1.1369	n/a	n/a	-1.1660	0.3839
USSH	(7)	5.2753	0.1091*	-1.7584	n/a	n/a	0.6317
	(8)	3.4067*	-0.2969*	n/a	-0.6960	n/a	0.4303
	(9)	31.0533	-0.9884	n/a	n/a	-3.5483	0.4586
INDEXSH	(10)	- 5.6672	1.0000	1.0000	n/a	n/a	1.0000
	(11)	- 6.5679	0.8140	n/a	-0.7104	n/a	0.6219
	(12)	1.1599*	0.2811*	n/a	n/a	-1.1360	0.2052
MAG77SH	(13)	-18.3906	5.1819	-2.4293	n/a	n/a	0.5751
	(14)	-20.6047	4.7230	n/a	-1.7180	n/a	0.4763
	(15)	11.4896*	3.5963	n/a	n/a	-4.2566	0.4366
MIG77SH	(16)	-15.8419	2.8741	-1.0674	n/a	n/a	0.5861
	(17)	-16.4996	2.7598	n/a	-0.8497	n/a	0.5492
	(18)	- 4.3256*	2.1579	n/a	n/a	-1.6887	0.4839
SASKSH	(19)	-12.0836	1.8309	-0.7908	n/a	n/a	0.9290
	(20)	-12.9820	1.6322	n/a	-0.5058	n/a	0.7539
	(21)	- 7.0389	1.2582	n/a	n/a	-0.8585	0.6406
NEWSH	(22)	16.0092	0.2954*	-3.2687	n/a	n/a	0.9092
	(23)	12.1127	-0.5766*	n/a	-2.0356	n/a	0.5739
	(24)	40.9545	-2.0226	n/a	n/a	-4.0093	0.4145

*denotes insignificant coefficient at 5% level based on t-test.